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EDITORIAL.

EUROPEAN CHRONICLES.

BOVINE TUBERCULOSIS AGAIN.—Our readers have certainly not lost sight of the new theory expressed by Prof. Koch in relation to the contagiousness of bovine tuberculosis to man, nor of the scientific discussion which took place at the seating of the Congress in London. Since that day, which certainly has marked a date in the history of that disease, numerous have been the articles which have been published by men of authority, such as McFadyean, Nocard, Arloing, Bang, and others.

Cases after cases are brought forward and records are received from everywhere to show the error which, their authors claim, has been made by the celebrated German bacteriologist. And, yet, will those be accepted as conclusive? Some of them were known before the statement made by Koch, and to a certain extent he ignored them; therefore it cannot be supposed that he will accept others brought in the same light, and then what will he require for experiment which he would consider as possible?

Will man do?

At the time of the sensational explosion of Koch's new theory, Dr. Garnault, in France, and shortly after a journalist of Belgium, who signs himself Jean Bar, offered themselves for experiments, and I believe that an American made also the same offer. What has become of the offers made? Has the American had the opportunity to sacrifice his life? Has Mr. Jean Bar

gone to the bacteriological Institute of Liege, as it was told? We cannot say. But, thanks to the *Archives de Parasitologie*, we can keep our readers *au courant* as to what has been accomplished by Dr. Garnault. His case is presented in the *Archives* fully. It is no longer communications from a political paper, it is from one of the most scientific journals of Paris, which records the whole history from the beginning to the end, at least to the experiment, as it will be begun.

Dr. Garnault is forty-one years old, weighs 100 kilos, and has always been in perfect health. On Aug. 14, 1901, he wrote to Prof. Koch, offering himself for experimentation under whatever conditions he desired. When in Paris, while waiting for an answer from Berlin, he had called on Nocard, who tried to persuade him to give up his idea and finally positively refused to inoculate him or even to furnish him with cultures. But, notwithstanding the high authority of the Professor from Alfort, and the opinion expressed by high personalities of the medical profession, among them Dr. Brouardel, who, like Nocard, considered the experiment as proving nothing and of a frightful responsibility, incurred uselessly—he waited a week, and, receiving no answer, he started for Berlin and called on the German professor.

His visit was not more successful. The plan of his inoculation, as he had thought might be done, did not seem to be acceptable, as says Dr. Garnault for Koch: “*It is not inoculation, but the simple ingestion of raw, unboiled milk, continued for months, which shall constitute the most convincing demonstration.*” *

In the presence of such a position of Prof. Koch, Dr. Garnault has modified his former plans and proposes now: after a testing injection of tuberculin, he will during one year, without interruption, drink only tuberculous milk, as rich in bacilli as he will be able to obtain. Every two or three months he will receive an hypodermic inoculation of a very virulent culture of bovine tuberculosis, whose virulence shall be controlled on calves as witnesses!

* *Archives de Parasitologie*, Vol. V, No. 1, p. 173.

Shall we hear more of the experiment of Dr. Garnault? The sacrifice of his life for a scientific object, useless according to Nocard, Brouardel and others, will certainly give rise to many different opinions, but whatever those may be, it seems that in this Dr. Garnault will have the admiration of all those who, like him, are willing to die for their opinions, call it fanaticism or insanity. Prof. Koch, with his certitude of harmless bovine tuberculosis, and unwilling to inoculate himself, has certainly not the brilliant side of the question.

* * *

It will be asked how is the question to be settled. Koch will not inoculate himself, as it is stated he did at the time he wanted tuberculin placed on the market; he will not incur the useless frightful responsibility of killing a man in inoculating him, and yet he believes in such little susceptibility on the part of man that it may be said he is refractory to bovine tuberculosis. To await the result of Dr. Garnault's experiment may demand some time, and when its result will be known it will prove nothing.

In the *Bulletin No. 33, of the Bureau of Animal Industry*, recently published, where Dr. D. E. Salmon treats the subject of the relation of bovine tuberculosis to the public health, a bulletin which I would advise every one to read, as it treats the subject with a master's hand, and constitutes by itself a powerful refutation of the plea advanced by Koch, there is a little notice on the bottom of page 35 whose importance and value will not be overlooked. It says:

"If it were true that man is entirely insusceptible to bovine tuberculosis, it would appear that monkeys, the animals most closely related to man, should also be insusceptible, or at least should not be easily infected with bovine bacilli. An experiment of the Bureau of Animal Industry, concluded while this bulletin is going through the press, indicates, on the contrary, that these animals are extremely susceptible to this form of tuberculosis. A baboon inoculated subcutaneously showed an ulcer locally, great enlargement of the axillary glands, and,

later, symptoms of acute generalized tuberculosis. After death the lungs, liver and spleen in particular were found filled with tubercles, and the other organs were more or less involved. Another monkey of a different species, inoculated at the same time, has become emaciated and has probably also contracted the disease."

Evidently the monkey is closely related to man, and to every unprejudiced mind this experiment will add its weight to those made on other animals; but, will say Koch:—"It is not man, it is not by ingestion of food, of milk that the infection has taken place," and the "most convincing demonstration" is not given.

Patience. We already know of a case of generalized tuberculosis of the monkey, whose carcass we had the opportunity to examine; tuberculosis brought about by ingestion of tuberculous food, and, again, the Société de Médecine Veterinaire Pratique is now engaged in the experiments I have spoken of. In a comfortably heated quarter of the large abattoir of the market of La Villette, three monkeys have been placed after having been tuberculinized by Prof. Nocard to ascertain their freedom from tuberculosis. They are to be fed with preparations of tuberculous substances from bovine origin. The feeding will vary. One meal only for one, another will have two meals a week, the third will have three.

Closely watched by veterinarians, the animals are exempt from exposure from any other way; in fact, are placed in as strict condition as the importance of the experiment requires.

I shall give our readers the results as soon as they are known.

* * *

But how different from the statement of Koch is the one made by Prof. Behring, at one meeting of the Academy of Sciences of Stockholm, and which was published in the *Berliner Thierärztliche Wochenschrift*: "*I do not bring you hopes, but facts which make me believe that I have succeeded in giving bovines immunity against tuberculosis.*"

Numerous observations have proved that the ordinary con-

ceptions that one has of the virulence of tuberculosis, are subject to modifications.

In relation to bacteridian anthrax, says Behring, one may speak of virulence and of attenuation. With tuberculosis, it may happen that a breed of tuberculous bacilli, entirely attenuated for guinea-pigs, may yet remain quite virulent for rabbits and be even more so for horses ; or, again, on the contrary, that another very virulent for guinea-pigs may prove much less dangerous for bovines.

In experiments upon bovines, it is possible to insure the immunizing action of tuberculous bacilli attenuated in their virulence for bovines. Immunization of those animals is better obtained by injection in the blood of bacilli comparatively inoffensive, according to the principle established by Pasteur, for the immunization of sheep against anthrax.

The tuberculous bacilli of man, cultivated for a long time in artificial media, behave towards bovines as a vaccine towards an active virus. This same human bacillus, cultivated since a short time or taken directly from man, specially after having passed through the goat, is very virulent for bovines.

The experiments made by Behring at Marbourg have proved the possibility of giving immunity to bovines against tuberculosis. He now wants to establish by experiments the minimum of time, of nocuity for the animal and of expenses necessary to realize in a practical point of view the immunization of bovines.

To carry this work to a satisfactory end he has decided to use the whole amount of the Nobel prize which was granted to him. The battle which is now fought against bovine tuberculosis is only one step forward in the struggle which will bring us to the extinction of human tuberculosis, and the discovery announced by Behring as an accomplished fact has a capital importance. It opens new fields for hope of immunization of man against tuberculosis and in showing that the tuberculous bacilli of man can be very virulent for bovines, it has given another severe blow to the theory presented by Koch. A. L.

NEW JERSEY IN LINE WITH A VETERINARY LAW.

The profession throughout the country will unite with their brethren in New Jersey in exultation at the news that the bill which has been pressed during the present session of the Legislature has passed both houses, received the Governor's signature, and is now a sovereign law. This bill, as most REVIEW readers know, creates a Board of Veterinary Medical Examiners, who take office on the first Monday in May. The act is entitled "An Act to regulate the practice of veterinary medicine, surgery, and dentistry in the State of New Jersey, to license veterinarians, and to punish persons violating the provisions thereof." It will thus be observed that the framers of the bill have forestalled the omissions in the laws of several of the States which have hitherto passed regulating acts, as the practice of dentistry is forbidden to others than licentiates, leaving no room for argument during the prosecution of violators, who seek refuge under the claim that they practice the art of dentistry only. Thus another strong State steps into line by recognizing the legitimate veterinary profession, and shuts its doors in the faces of charlatans as well as those who secure their education from institutions which fail to fulfill the modern idea of scientific training.

Here is another splendid example of the value of State organization. Instead of warring factions, as existed a few years ago, the amalgamated associations, under the banner of the Veterinary Medical Association of New Jersey and the irresistible leadership of President William Herbert Lowe, are as united and harmonious and enthusiastic a body of professional men as exist in this country, and they threw their shoulders against the legislative doors with so much force that they swung inward with a bang, and they tired not until every member of the Senate and Assembly had been personally appealed to, with the glorious result that we are to-day enabled to chronicle.

In a private letter President Lowe says: "It is hardly necessary to explain to you the great work done through the machinery of our State organization. The influence and power of the

consolidated State association has certainly been thoroughly tested by the achievement the profession in New Jersey is so proud of to-day. The act could not possibly have been passed by the Legislature had it not been for our splendid organization. The members in our twenty-one counties worked like one man, and every order was obeyed with a will that made one's heart glad, and each legislator was interviewed by a veterinary constituent. We were fortunate in having the hearty endorsement of the State Grange as well as the State Board of Agriculture. At its recent meeting in Trenton the latter body adopted the following resolution by a unanimous vote: 'That the State Board of Agriculture, recognizing the necessity and value of competent veterinary service to live-stock owners, agricultural interests, and the preservation of public health, do heartily approve and endorse the movement for the establishment of a State Board of Veterinary Medical Examiners to regulate the practice of veterinary medicine and surgery in the State of New Jersey.' I am personally of opinion that the profession has not been in close enough touch in the past with agricultural interests, boards of health, and kindred organizations. It is by co-operation that the best results can be obtained. . . . I have been unable to write all the veterinarians who have assisted in the enactment of the present bill, and you will therefore do me a great favor if you will kindly thank the members of the profession throughout the State in behalf of myself and the Legislative Committee through the pages of the REVIEW."

Three cheers for New Jersey! Next!!

THE PROVINCE OF THE A. V. M. A.

The February *Journal* advocates the dropping of clinics and papers upon practical subjects at the meetings of the A. V. M. A. Such a step would, in our judgment, be fatal to the best interests of this national body, and would result in a loss of membership and interest that would rob the organization of its representative character. What practising veterinarian would journey from the East to the Northwest to hear the reading and

discussion of a long thesis upon Texas fever, for instance, important and vital though the subject be, when he could read the whole affair at his leisure at home? We need all classes of the profession in the A. V. M. A., and when any number are deprived of the material which concerns their interests and their requirements, their support is lost. Sectional work is the only solution of the subject, and the association is rapidly resolving itself into that shape. It is gaining in quantity and quality of its membership and influence every year, and we beseech the members not to do one act which will lessen its progress. Let well enough alone.

ASSEMBLY BILL No. 254, introduced in the New York Legislature by Mr. Merritt, an abstract of which was published in the REVIEW for February, has passed the lower house. We regret to say, however, that the Public Health Committee, to which it was referred upon its introduction, has through amendment shorn it of all the benefit which it would in its original form have conferred upon the veterinary profession. When the bill started on its course it made it mandatory upon the district-attorney of a county to prosecute an offender when supplied with evidence by a regular veterinary medical association, but when it emerged from the committee it simply became obligatory upon such society to place a copy of all papers in his hands before such prosecution is begun, without conferring the least assistance upon the society in its fight to purify the ranks of the profession. It amounts to the addition of red-tape, and it would have been better had the Public Health Committee have allowed it to slumber in the proverbial pigeon-hole. In the meantime, the subject of the prosecution of illegal practitioners in New York State lies dormant, and the quack and fakir wax fat with the product of their nefarious trade.

READ the very full and interesting report of the fourteenth annual meeting of the Iowa State Veterinary Medical Association, published in the department of "Society Meetings," in this

number. It is an object lesson in such reports, and cannot fail to be of value to the members and to veterinarians in general. Three of the papers presented are also published this month, and the remaining ones will appear in quick succession, as they are all in hand. Incidentally, the profession should appreciate the enterprise of the REVIEW, as the space requisite for such a lengthy document has necessitated the addition of many pages, as the publishers are unwilling to permit any of the regular departments to suffer in consequence of this heavy demand upon their pages.

"THE LIVING AND THE DEAD: Reminiscences of the Veterinary Practitioners of Forty Years Ago. By One of Them." Such is the title of a series of articles shortly to begin in the pages of the REVIEW, and to the older members of the profession who were contemporaneous with the events narrated, as well as to those who treasure the precious history of the *personnel* of veterinary medicine in America, it will afford very entertaining reading, while the anecdotes and personal characteristics of the men who were upon the veterinary stage at the outbreak of the Civil War will appeal to their sense of humor and curiosity.

WE wish to ask a number of correspondents and secretaries of veterinary medical associations to bear with us for a short time, as it became necessary this month to withhold a large quantity of valuable material sent in for publication. The demands upon our space have been so great that, even with a heavy increase of it, we find that much will have to be held until the May number, when we hope by extra pages to keep faith with all of our valued contributors.

WE were much gratified at receiving an interesting letter on March 31 from Dr. Olof Schwarzkopf, U. S. Army, stationed on the Island of Luzon, Philippines. It also contained an article for the REVIEW.

ORIGINAL ARTICLES.

MILK INSPECTION.

BY ANDREW HYDE, D. V. S., NORWICH, CONN.

Read before the Connecticut Veterinary Medical Association, February, 1902.

(Concluded from page 984, Vol. XXV.)

Milk is a good media for the multiplication of bacteria, while the cows themselves, their food and excrement are the hosts of millions of species. That the cow stable is the most fertile source of bacterial infection of milk must be apparent to anyone who is familiar with the general condition of them. The cow that is covered in dust and manure from infrequent cleaning, is the greater cause. With back, belly, sides, hips, flank, tail and udder loaded, it is impossible for the milker to keep the filth out of the pail. If she is unhealthy, she is doubly a source of danger.

An observation of the condition of stables where sanitation is not practiced, will convince those who may think inspection of them unnecessary, that they are mistaken. For example, let a visit be made to the basement of a barn seventy-five feet long, and observe a row of cows, extending from one end to the other, and three or four feet back of them a pile of manure of equal length, and well up to the floor above. One door is the usual number, and the windows are few and small. Drainage is imperfect, ventilation unknown, and everything is saturated with putrefying odors and exhalations of the cows. If one has any doubt but that such odors are absorbed by the milk while in the udder or get into it during the process of milking, have some of the morning's milk delivered for the breakfast coffee, and it is quite safe to say that it will not require the logic of a senator to prove that milk produced under such circumstances will be disagreeably tainted.

Other impurities of milk may occur from adulteration, coloring matter, chalk, burnt sugar and salt are sometimes put into milk.

Mixing skim-milk with whole milk to obtain an average quality is practiced by the skilful. This practice is said to be on the increase. The removal of a part of the cream is another method of adulteration. Milk thus adulterated is not only unsafe, but it contains less food value than it should, and the consumer is deprived of nourishment which is supposed to be present.

If one is dishonest enough to water milk, he will probably not be concerned about the purity of the water added. Impure water contains many bacteria, among which may be some pathogenic species, such as *bacillus coli communis*, that cause indigestion, diarrhoea and dysentery in children, and adults having weak digestive organs.

Various chemical compounds are sometimes added to milk, to check or prevent bacterial changes. Among these may be mentioned formaldehyde, borax, salicylic acid, boracic acid, salicylate of sodium, carbonate and bicarbonate of sodium. These substances have very little taste or smell, and can only be detected by a chemical analysis. Their general use as preservatives is regarded as detrimental to the public health.

Milk may vary in quality from causes other than the use of adulterants. Some breeds of cows and individual of the same breed give richer milk than others. Holsteins are famous for producing large quantity, while the Jerseys are noted for the richness of their milk. Food has an important bearing on the quantity of milk secreted. The period of lactation also influences the composition of milk, notably the casein and albumin.

Normal milk contains 33 per cent. of casein and albumin, but the first few days after calving the milk may contain 15 per cent. of these constituents. The total solids of milk increase as the period of lactation lengthens.

"HOW TO EXAMINE MILK."

The essential thing to do in examining milk is to distinguish between flagrant fraud and unavoidable variations. The first thing to be done is to obtain a sample, which may be either

a single or composite one. Before the sample is taken the milk should be thoroughly mixed, so that the quantity taken may fairly represent the quality of the milk from which it was removed. A single sample may not be sufficient to clear away all doubt in regard to the quality of the milk from an individual cow or of a herd of cows, but a composite sample, extending over one or two weeks or more, will give reliable data on which to base an opinion, because the danger of occasional variation is avoided. It is true, the circumstances of municipal inspection may be such that the use of a composite sample for seeking positive evidence is impracticable, and that other methods will give a safe result.

A composite sample is the total of daily samples extending over a desired time, *i. e.*, it may be the sum of the daily samples of a week or a month. A sample is collected daily (say one-third of an ounce) and placed in a bottle containing some fat solvent, such as ether or chloroform, but preferably carbon bisulphide (one objection to its use is its disagreeable odor), because it is cheap and has the property of preserving the normal quality and miscibility of milk for a long time, probably indefinitely. For example, suppose the composite sample is to cover a period of ten days, place in a bottle one-half ounce (about 15 cc.) of carbon bisulphide, and every day add one-half ounce of the properly mixed milk. Then shake the bottle until on standing the fat of the milk is all on the bottom of the bottle. Each time, after putting in the daily sample, the bottle must be tightly corked. At the end of ten days the composite sample will consist of five ounces of milk (about 150 cc.) and ten per cent. as much of carbon bisulphide. It can then be sent to a milk analyst, if one is not prepared to make an accurate analysis himself.

Good whole milk has a whitish color and sweetish taste. If it stands for several hours cream rises, and if complete separation has taken place, the cream should be about one-fifth of the total bulk. Skimmed or watered milk is thinner than whole milk and has a bluish-white color. If the milk is pure there

should be no sediment on the bottom of the vessel after the cream has set. The yellowish color of milk is usually due to fat, but it may be caused by bacteria and the presence of coloring matter.

* "To detect coloring matter, add to some milk an equal quantity of ether and shake the mixture; on standing, if coloring matter has been used, a yellow colored solution will rise to the surface; if none is present, the solution will be clear."

† "Annato or Butter Color is determined as follows: 100 cc. of milk, made strongly alkaline with sodium carbonate, are placed in a small cylinder; a strip of filter-paper, about one-half inch wide and five inches long, is introduced, and the whole allowed to stand in the dark for twelve hours. If annato is present, the strip of paper, after washing, will be a pale salmon color, which is changed to a decided pink by moistening with a solution of stannous chloride, and after drying at the temperature of the room to a bluish color, on treatment with strong sulphuric acid."

The test for acidity of milk. It is sometimes desirable to know if milk is fresh, or old and near the souring point, as in the latter condition it is unfit for infants, children or delicate persons, and its value is less. For this test the most convenient method is that of using certain alkaline tablets (known as Harrington's Alkaline Tablets). Two of these are dissolved in water and added to an ounce of milk. They are of such strength that a solution of two of them will turn an ounce of fresh milk pink. If the milk remains white after this quantity has been added the supposition is that it is old and near the souring point, or that acid has been added.

The test for cream is a simple one, but not accurate, and about the only advantage of it is, that it gives a good opportunity for noticing if filth or sediment is present. The apparatus required is a creamometer, which is filled with milk to the zero mark, and then put in a cool place for twenty-four hours,

* Harrington & Woll's Testing Milk, p. 92.

† N. Y. City Board of Health Report, 1896, p. 169.

when the per cent. of cream can be noted. Good milk should contain 20 per cent. of cream.

Another method may be used to facilitate the test. Fill the creamometer half full of hot water (120° F.) to which has been added a few drops of a solution of caustic soda, then fill with milk up to the zero mark. After stirring well set in cold water (40° F.) for thirty minutes, when the cream will have risen, and the percentage present, multiplied by two, will be the cream content of the sample tested.

LACTOMETER TEST.

This test is used to determine if milk has been skimmed or watered and is based on the specific gravity of milk, which is slightly heavier than water, ranging in good milk at 60° F. from 1,029 to 1,033. The instrument required is a glass bulb, with a tubular neck, containing a graduated scale. Some lactometers have a thermometer attached, which is very convenient, as not only the gravity is indicated, but also the temperature of the milk. Make the temperature of sample 60° F., then insert the lactometer, and note the reading of the scale at the surface of the milk. Good milk will indicate about 110 on the lactometer at 60° F. If the lactometer sinks below 100° and the milk is thin and bluish-white, water has been added. On the other hand, if the lactometer reading is above 100° and the milk is rich in appearance and sticks to the glass, it may be considered a pure milk. If cream is removed the gravity is increased; if water has been added, it is decreased, hence, a sample of high gravity indicates skimming, and a low one watering of the milk. Some cream can be removed and water added by the skillful, and the gravity remain unchanged, and to detect that condition another test is used in connection with the lactometer, known as the Babcock test, which by certain formula discloses the proportion of fat and total solids present. A fair opinion of the composition of milk is indicated by the percentage of fat present, as the total solids increase and diminish as the fat is greater or less. If water has been added to milk the percentage of fat is reduced in proportion to the other con-

stituents, but if milk is skimmed there is a greater proportion of solids, not fat and water. Full directions for using the lactometer are found in Harrington and Woll's "Testing Milk and its Products," pages 80 to 85.

For determining the fat content of milk the Babcock test is a rapid method, and the one most extensively used. The procedure for making the test is simple, but requires some careful attention to details. Complete descriptions for making the test are contained in "Bulletin of Wisconsin Experiment Station."

* "Positive evidence of adulteration is furnished, a fair sample of herd milk being taken :

(1) When the Sp. Gr. at 60 degrees F. is less than 1,029 and the fat is 4 per cent or over, the milk is watered.

(2) When the Sp. Gr. at 60 degrees F. is more than 1,035 and the fat less than 4 per cent., the milk is skimmed.

(3) When the fat is 3 per cent. or less and the total solids more than 12.00 per cent., the milk is skimmed.

(4) When the fat is 3 per cent. or less and the Sp. Gr. at 60 degrees F. is less than 10,319, the milk is skimmed and watered."

"Test for formalin." A few drops of milk are floated on a small quantity of concentrated sulphuric acid, containing a trace of chloride of iron. If formalin is present a violet blue ring will appear at the line of demarkation."

"Test for salicylic acid or salicylate of sodium : Coagulate some milk with a few drops of acetic acid, filter, and shake the filtrate with ethyl ether in a separating funnel. The ether is carefully drawn off and evaporated in a water bath. The residue, if any, is treated with a little water, filtered, and a drop of neutral ferric chloride added ; a violet color indicates salicylic acid or salicylate of sodium.

"Sodium carbonate and bicarbonate are indicated by a strong alkaline character of the ash and prominent effervescence by adding dilute acids. Also to 10 cc. of milk and 10

* Annual Report of the Chief Inspector of Milk and of the Chemist of the Board of Health of Philadelphia, 1897. P. 34.

cc. of alcohol and a little of a one per cent. rosolic acid solution. If soda has been added to the milk, a rose color is produced; and if absent a brownish color is present."

"Test for borax or boracic acid: To 100 cc. of milk, add lime water to make it alkaline, dry it, and then burn the mixture slowly to ash; acidify the residue with strong hydrochloric acid, and add 20 cc. of methyl alcohol. Connect the flask with a condenser and distill 10 cc. of the methyl alcohol into a platinum dish. Place the dish in a dark place and ignite the alcohol; if borax or boracic acid is present, it will burn with a grass-green flame."

"PREVENTIVE INSPECTION."

Much praise is given to the dairyman or dealer who pasteurizes his milk, and puts on the market in a practically germless condition, but greater credit belongs to him who conducts all his dairy operations in such a sanitary manner as to render pasteurization unnecessary. Nothing is added to the nutritive value of good milk by heating it to a temperature sufficient to pasteurize it, and some assert that such a process destroys some of its digestive properties, as well as imparting to it a burnt taste, which is very disagreeable to some. There is also the question, if the practice of pasteurization for the removal of filth was generally adopted, would it not tend to carelessness and more filth in the management of dairies?

Municipal inspection should begin by an examination of the cows. This should be done by a competent person, selected because of his ability, the result of a competitive examination if necessary. The precaution of testing the cows with tuberculin should be done whenever it is expedient, notwithstanding the recent opinion that the transmission of tuberculosis from bovines to the human family is very slight. A careful examination should be made of the health and general appearance of the cows. Those having recently calved, or seriously lame from foot-rot, or the victims of sores discharging pus, should have their milk excluded from the commercial article. The same may be said of the milk of very old cows, or those in a

debilitated condition, or those having a bodily temperature sufficient to indicate disease. The list of ailments is a long one to which cows are more or less subject that render milk unfit for food. Many of these might escape the attention of the well-meaning dairyman, simply because he had not been trained to observe them. The trained entomologist can discover at a glance the small insect on the trunk of a tree, while one who lacked his power of observation could not find it until it was pointed out to him. So, too, with the educated veterinarian; he can, for example, observe the unusual convexity of the lens of the horse's eye, that makes the animal unsafe, which would in all probability be overlooked by even the skillful horseman. It is not a case of short-sightedness of him who could not see the insect, or the convexity of the lens, but a highly developed power of observation of the entomologist and veterinarian.

The food and feeding of dairy cows should be under systematic regulation. That certain kinds of food are injurious to cows and their milk is well known. Bitter weeds, turnips and wild onions will produce a bitter taste and disagreeable odor in the milk of cows consuming them. Pungent smelling ensilage which is in the active stages of decomposition should be excluded from the cow's ration. The by-products of distilleries, readily available in the vicinity of large cities, such as brewery grains and swill, produce a large flow of milk of inferior quality. Moreover, the cows fed with that food are not as healthy as those fed on good hay and grain. Musty coarse fodder of any kind, and decaying vegetables should be excluded.

To avoid the dust incident to feeding, it is necessary that the cows should be fed after milking; the cows should be cleaned after the dust settles. The manure and other stable filth should be removed frequently. It is impossible to keep dirt out of the milk if the atmosphere of the stable is laden with it. The same is true if the body and hips of the cow are covered with dirt and particles of manure. The stable at best is a place where dirt gathers rapidly, therefore it is important

to exercise the precaution of having it frequently and thoroughly cleaned. Of the list of impurities found in milk, the majority have their source in stable dirt. When an eighth of an ounce of dirt is found in a dozen gallons of milk, it is apparent that there is gross carelessness in the management of the stable and its occupants.

The necessity of pure water for the cows, and cleansing the dairy utensils, cannot be made too emphatic. The source of the supply should be inspected to learn if the well or spring is sufficiently deep and clean and so located that it will not be polluted by surface drainage or otherwise. If the location or depth of the water source seems unsuitable, and there is fear that the water is being contaminated with bacteria from surface drainage, the stable, barnyard or dwelling, a sample should be sent to a bacteriologist for examination. The water from a well infrequently used should be examined by a bacteriologist or the water removed a number of times before being used regularly.

The drinking places for the cows should be slightly elevated, and the surface about the trough paved with cobble stones or other suitable material, to prevent mud and dirt from getting into the water. Spittle and particles of food from the cow's mouth are a constant cause of filth in the water, making it necessary to frequently clean the watering trough or other drinking place, unless it be a running stream of considerable size.

The arrangement of the stables should be such as to make them light, airy, roomy and easily drained. Cows kept in apartments partly under ground (basements) will not do as well as in well constructed stables above ground. There is a dampness to under ground stables, which is almost impossible to overcome. In addition to this there is insufficient light and ventilation and the inevitable condition of imperfect drainage. These unsanitary conditions prey upon the vital energy of a cow and weaken her physically. All of them can be obviated in stables above ground. Five hundred cubic feet of air space per cow is deemed sufficient, if the stable is well supplied with

windows and ventilators, to furnish light and air. It is, of course, important to frequently remove the manure some distance from the stable; it ought never to be piled in the stable, as is often done. The stable can be easily drained if the flooring is hard wood laid tight, giving a little pitch for the liquids to run off into a tank provided for the purpose.

Carelessness on the part of the milkers themselves is a common cause of dirty milk. They should never begin milking immediately on entering from the hay-field or hay-loft or after doing any dirty work. Dust and filth will settle on their clothes as well as on the cow's back, and it is just as essential that it is removed from one place as from the other.

Another step in the control of milk is the inspection of the dairy and other places where milk is kept, handled and sold. The farm dairy, in most instances, consists of a milk room, provided with the necessary utensils for containing, straining and cooling the milk. This place should not be so situated that it will get foul odors from the outside, nor so conducted that they will originate within it. The room should be as pure as sunlight, fresh air and strict cleanliness can make it. It cannot be kept pure if it is immediately adjacent to the barn-yard, stable or silo. Special care must be exercised to dry the place out once a day by opening the windows, etc. The wood-work as far as possible should be painted in some light color, that will reveal dirt and decaying milk upon it. There should be an abundance of pure water in the room, if the milk containers and other utensils are to be easily and thoroughly cleaned.

The milk-pails, cans, etc., should be made of substantial metal, well tinned, and as seamless as possible. Crevices serve as the abode of germs and filth, which cannot be fully removed without hot water, some cleansing preparation and special care. The dairy room should be well piped for drainage.

While it is almost the universal practice on the farm to provide a place especially for keeping milk, it is not always the case in the butcher shop, grocery store and restaurant where milk is kept for sale. Even in the consumer's home, there is

often a lack of attention in caring for milk. The consequence is, it sometimes sours quickly and a careful dairyman is blamed. It is just as necessary that all of these parties should exercise the same care of their milk as the dairyman gives it, while it is in his possession. Frequently there is very little thought given by dealers and consumers to the temperature of the places where milk is kept. It is generally intended to keep it in a cool, suitable place, but whether the temperature is sufficiently cold to keep good milk from souring is seldom considered. Milk delivered in good condition can be kept sweet one or two days at a temperature of 50° F., but it will not keep from souring that length of time if exposed to the higher temperature of some refrigerators in very warm weather. An ice box may seem cold on account of the intense heat outside, but the thermometer placed in it would register considerably above 50° F.

Sometimes milk which is clean and pure when it leaves the dairyman's hands acquires a peculiar odor afterwards. The refrigerator, whether in the grocery store, market, residence or restaurant, and the container in which milk is kept, are a common cause of this trouble. It infrequently happens that the butcher who sells milk keeps it in an open vessel in a refrigerator with meats, some of which may be tainted.

The family supply is placed in the refrigerator with cooked meats and vegetables. Others keep it in unsuitable receptacles, as wooden vessels and old dishes. The property of milk to readily acquire odors makes it necessary that it should at all times and places be kept under conditions to prevent them being taken up by the milk. Therefore, as stated above, it is important that the dealer and consumer exercise the same care as the dairyman gives it.

I HAVE every copy but one of the REVIEW since 1887, and could not get along without it"—(*M. J. Jones, V. S., Cuba, O.*)

"I PERUSE THE REVIEW every month, not only because it is interesting, but because it is absolutely necessary in order that I may know what is going on in the veterinary profession."—(*J. Payne Lowe, D. V. S., Passaic, N. J.*)

ACUTE EPIZOÖTIC LEUCOENCEPHALITIS IN HORSES.*

BY W. G. MACCALLUM, M. D., *Associate in Pathology, Johns Hopkins University, and S. S. BUCKLEY, V. S., Veterinarian, Maryland Agricultural College.*

(*From the Pathological Laboratory of the Johns Hopkins University and Hospital.*)

PLATES I, II, III AND IV.

A recent epizoötic among horses in Maryland, resulting in the death of a great many animals after a very brief illness, has led to the post-mortem examination of a number of such animals with results which seem worthy of note.

The disease, which is popularly known in this region and probably elsewhere as "cerebrospinal meningitis," presents fairly characteristic symptoms, which when the cases appear in epizoötic form lead readily enough to a diagnosis. Prodromal symptoms are not always present, although in many cases a general malaise may be noted before the acute onset. The acute symptoms are in general such as may be referred to a cerebral lesion. There may be drowsiness associated with an impairment of sight. Partial or complete paralysis of the pharynx is often observed; twitchings of the muscles of the shoulders and thighs, coldness of the extremities, and a general condition of unsteadiness and weakness with a tendency to walk to one side or a staggering, objectless gait, arise early in the disease. The pulse is usually normal; the temperature varies between 96° and 103° F., an elevated temperature usually indicating a secondary complication.

The horse may then become gradually comatose, responding slightly or not at all to stimuli and soon sinking to the stable floor not to rise again. In other cases there is a wild delirium, the animal rearing about and rushing blindly against obstacles, and this may be followed by exhaustion and the comatose condition.

* Reprinted from the *Journal of Experimental Medicine*, November, 1901.

The duration of the disease varies from a few hours to a week, the average being perhaps 72 hours. Horses which recover are said to become "dummies"—animals with a permanent cerebral lesion and defective intelligence.

The following pathological report is based on the examination of four brains, brought to the laboratory by one of us (Buckley), from animals dying in the acute stages of the disease. There was also one brain from a horse which was said to have had the disease some time before and to have recovered, dying afterward from some other cause.

Of the four brains from acute cases, three were hardened in formalin and one was fresh. Of these, none showed any signs of the presence of an inflammation of the meninges; there was at most a trifling hyperæmia of the pia mater. The surface of the fresh brain showed no localized or circumscribed alterations in color, but the normal level of the convolutions was not everywhere preserved. In the frontal region on each side, anterior to the motor region of the cortex, there was a slightly depressed area which was softly fluctuant, but not marked out by any superficial hyperæmia or discoloration. On cutting through this brain a glairy fluid with small granular pulpy masses of whitish tissue flowed out from the softened area, and the rather thin roof composed of the meninges with the grey cortex collapsed over the cavity thus left. The lesion seemed almost entirely limited to the underlying white matter, which throughout an irregular area, perhaps 2x1 cm. in diameter in the left hemisphere, and a symmetrically placed focus 5 cm. in diameter in the right, was completely softened into a diffused mass made up as described of shreds of softened, necrotic-looking, greyish white brain substance lying in a greyish, glairy or somewhat glutinous fluid. The portions of the brain substance forming the lining of the cavity could be fairly sharply outlined from the adjacent more normal white matter by its softness and raggedness, by its mottled greyish and yellowish opacity with translucent areas, and by the presence of numerous minute haemorrhages sprinkled through it and adding to its mottled ap-

pearance. The remaining brain substance showed no apparent abnormality. The lining of the cerebral and olfactory ventricles was not congested nor inflamed. The blood-vessels were carefully traced and showed no thrombotic occlusion at any point.

Examined microscopically in the fresh state, the softened material showed necrotic cells and cell fragments of various forms; there were also beaded elongated fibrils thought to be axis cylinders with adhering myelin droplets. But few nuclei were found. No bacteria were found by the ordinary staining methods.

Cultures were made aërobically and anaërobically on various media—agar, glycerin agar, blood-serum agar, hydrocele-fluid agar, etc.,—but all were negative. A rabbit inoculated with 1 cc. of an emulsion of the softened material into the ear vein remained well.

The appearance of the hardened brains corresponds very closely with that just described. Nowhere were any blood-vessels thrombosed or occluded in any way. Nowhere was there evidence of inflammation of the meninges. Section of the cerebral hemispheres showed irregular areas in the white matter of the occipital as well as the frontal lobes, and once in the temporal lobe, in which the brain substance had been softened and partly replaced by a translucent coagulated substance resembling agar. Shreds of greyish brain substance coursed through this clear gelatinous material. The adjacent greyish and opaque brain substance was studded with haemorrhages through a thickness of about 3 mm. Where, as in some cases, the areas of softening were made up mainly of the greyish necrotic brain substance without much collection of fluid, the haemorrhages were scattered throughout. In no instance did the cortical grey matter appear to be implicated, nor were the basal ganglia invaded.

Microscopically the lesions are practically identical in all the four cases except that while in all the process is quite acute, in one the destruction was less complete than in the others and

the replacement of the necrotic material by coagulable fluid less extensive. A general view of a section carried through the cortex into the centre of such a focus shows the meninges practically normal, the elements of the grey cortex not notably altered, the nerve cells staining well, the blood-vessels patent and filled with blood. Passing inward the nervous elements begin rather abruptly to degenerate, disintegrate and disappear, and haemorrhages begin to occur here and there; further toward the centre no more nerve cells are visible, axis cylinders are much degenerated, neuroglia cells stain badly, and the tissue has a much disintegrated appearance, being infiltrated with not very numerous polymorphonuclear leucocytes and fewer mononuclear round cells. Still further, and all evidences of tissue, except for small islands of necrotic substance, disappear in the highly refractive vacuolated hyaline material described (Plate I, Fig. 1.). We have then to consider in detail:

1. Changes in nervous elements.
2. Changes in neuroglia.
3. Changes in blood-vessels.
4. Changes in lymphatics.
5. Exuded fluid and cells.

The pyramidal ganglion cells which send down their axis cylinders through the degenerated area appear normal in the uninvolved portion of the cortex. The periganglionic cells may perhaps be more than usually numerous. In the lower layers as one approaches the degenerated area the ganglion cells become swollen and granular, the nucleus stains less sharply, and the cell processes, so definite in the higher layers, have been lost or disappear after a very short course, forming mere projections from the outline of the cell. Many such cells take on a rounded outline and appear now as large, irregularly rounded, granular cells with rather diffusely staining nucleus. Indeed, as in Fig. 2 (Plate I), such cells may be seen in the same field with their disintegrating processes which are slightly separated from the cell body; others still more degenerated have lost their nuclei. The much-degenerated cells lie in a tissue of

axis cylinders and neuroglia which is thickly sprinkled with globules of various sizes of high refractive index and staining faintly bluish with haematoxylin. In specimens stained by Weigert's method these globules take the typical myelin stain.

The axis cylinders are somewhat swollen and thick and show evidences of disintegration (Plate II, Fig. 3). They persist, however, fairly well into the completely necrotic substance, where they end abruptly. Throughout the degenerated area their myelin sheaths are broken up into the globules described above, many of which adhering to the axis cylinders give rise to the varicose appearances or bulbous swellings along the course of the fibril. In specimens prepared by Marchi's method such varicose beaded masses often stain black.

The neuroglia has also suffered severely. Traced by the aid of Mallory's special methods from the relatively normal cortex toward the centre of an area of softening, the dense matted felt-work of the outer region is seen to give place to a delicate network of finer deeply staining fibrils, which in their turn completely disappear further toward the centre, leaving the material there without any definite neuroglia stain and consisting of necrotic débris of cells and tissue without connecting supporting substance. Associated with this gradual disintegration of the neuroglia feltwork there are changes in the neuroglia cells. These lose the sharp contours of their nucleus, which comes to stain a diffuse greyish purple without any sharply stained chromatic particles ; such nuclei become more and more indistinct and finally disintegrate.

Even more striking than these destructive degenerative changes in the nervous elements and the neuroglia cells and fibrils are the changes in the blood-vessels of the affected area.

It was stated above that examination of the vessels macroscopically and with scissors failed to reveal anywhere the presence of an occluding thrombus or embolus. Sections, too, made to pass through the blood vessels in those brains already hard-

ened when brought to the laboratory showed them to be filled only with blood. In the area of degeneration, however, wherever small vessels are left they may sometimes be found filled or partly filled with an elongated highly refractive hyaline mass, the free ends of which may be rounded off or pass over insensibly into the adjacent compressed and coalescing red blood-corpuses. Such hyaline formations have been found mainly in the smallest vessels and in the degenerated area. Sometimes the lumen is only partly filled and the hyaline material may show gaps in which lie red corpuscles (Plate IV, Fig. 6), or it may form a thick bluish-staining lining for the vessel in the lumen of which lie the red corpuscles.

The walls of the vessels in these areas show, however, extensive inflammatory changes. They are infiltrated (Plate III, Fig. 5) with cells of the type of the polymorphonuclear leucocyte for the most part, but occasionally mononuclear or so fragmented as to be difficult of diagnosis. This process affects arteries as well as the veins, and the infiltration extends throughout all the coats. The adventitial lymphatic sheath is in most cases distended and may contain masses of polynuclear and mononuclear cells with red corpuscles. Very often, however, this sheath contains only red corpuscles, but these in such numbers as to distend it to a diameter far greater than that of the blood-vessel. It seems most probable that this haemorrhage has occurred by diapedesis, constituting one of the evidences of inflammation, but here and there there are apparently evidences of the direct rupture of the wall of a small vessel. The distended lymph sheath may also rupture; at any rate, in nearly every case there is a zone of haemorrhage in the tissues round about it. Such extravasated red blood-corpuses, like those within the sheath and the blood-vessel, are in a good state of preservation, indicating the extreme acuteness of the process. There is nowhere any definite accumulation of haematoxin or haemosiderin to be found in the tissues or in the lymphatics—further evidence of the rapid course of the disease.

The small vessels lying in the centre of such haemorrhages

are very commonly such as are plugged with the rather blue-staining hyaline masses already described (Plate IV, Fig. 6). Other vessels may contain a similar hyaline material and indeed hyaline is often found both within and surrounding the vessel. Especially is this true in the case of some of the larger vessels lying within those meningeal processes which pass deep into the sulci. There the surrounding tissue is spread apart by the presence of this coagulated material.

The nature of the hyaline substance offers perhaps some difficulty of explanation. Leyden and Goldscheider* express themselves as follows :

Sometimes in oedema, softening or acute inflammation of the cord one finds in sections structureless amorphous masses. These occur in the central canal, in the grey substance, less often in the white matter, often about the vessels. This phenomenon is explained in various ways : by some thought to be coagulated albuminous or fibrinous exudate, by others interpreted as a colloid, hyaline, mucoid or gelatinous degeneration of softened nerve substance or swollen and diseased neuroglia. It is this structureless mass which Lockhart Clarke described as " granular or fluid disintegration." According to that author it consists in a softening and destruction of the nerve tissue and its change into a granular mass which, with the exuded fluid, mixes to form a homogeneous substance. These masses take the carmine stain very weakly. Their nature is not yet settled ; it is even questionable whether the material under discussion is everywhere the same. The perivascular masses are most probably exudate ; whether this will hold for all similar forms is, however, uncertain. The attempts to determine the nature of the substances by various stains have so far not been successful.

The problem before us is somewhat similar. The hyaline material within and about the meningeal vessels looks at times as if it had been produced by the coalescence of red corpuscles, but in general it is too abundant and homogeneous to be so explained. It is rather denser and more refractive than coagulated plasma would appear, and with water blue it stains brilliantly. In its general appearance and reaction it agrees fairly well with the larger hyaline masses in the areas of necrosis. Such hyaline material occurs also scattered about among the

* Die Erkrankungen des Rückenmarks und der Medulla oblongata, in Nothnagel's Spec. Path. u. Therap., Bd. X, Wien, 1897.

tissue elements, but nearly always about a vessel except in the most degenerated areas where the tissue becomes necrotic and entirely gives place to the structureless mass. There is even difficulty at times in outlining this necrotic substance from the hyaline material. Highly refractive as elsewhere it shows here, too, the tendency to contract and leave vacuoles, probably as the effect of the hardening reagent, so that the great central mass has, as a rule, an appearance almost like the cut surface of a Gruyère cheese (Plate II, Fig. 4). Often in such vacuoles a delicate coagulum can be made out, suggesting the presence there of a fluid of less density. The highly refractive substance is somewhat denser about the vacuoles. It is apparently very brittle in the sections and shows cracks and fissures here and there. It stains with eosin, taking a fairly bright pink color; Congo red tinges it brick red. Van Gieson's stain leaves it pinkish yellow—neither definitely red nor definitely yellow—with water blue and fuchsin it stands out sharply from the adjacent substance by its bright deep blue color; so also do the masses in and about the vessels. With Mallory's phosphotungstic acid haematoxylin it stains a rather pale purplish pink; with his modified stain for connective tissue as applied to the nervous system, it takes a dense deep purple color. With methylene blue, carbol fuchsin, Weigert's fibrin stain, etc., it is hardly tinged at all. Osmic acid does not stain it; in a Marchi preparation it is just visible as a smoky area.

The material stains therefore with acid dyes, in which respect (according to the hypothesis of P. Ernst) it corresponds to that form of hyaline derived from epithelial cells. Nervous elements being of epiblastic origin, might perhaps furnish the great mass of hyaline in the centre of the focus. There would be difficulty, however, in thus explaining the presence of a substance staining in exactly the same way in and about the arteries as well as the veins, and we must probably consider this one of the exceptions to the rule, as is the colloid of the thyroid which, although derived from epithelium, stains red with Van Gieson's stain.

In the smaller vessels in the neighborhood of the most intense degenerations the hyaline masses described above stain rather bluish with the haematoxylin and eosin stain, which seems to indicate that they are not quite identical in nature with the remaining hyaline substances described.

As stated above, the central hyaline mass in each focus is bounded by ragged edges of necrotic substance with here and there free islands of such tissue. Nowhere are there any evidences of the least pressure on this tissue, which becomes gradually rarefied toward the margin, where it quite disappears. This mass is, therefore, in all probability, the result of the breaking down of the brain substance—perhaps added to also by exudation of fluid from the vessels.

The exudation of leucocytes is not very abundant in the sections. Beside the infiltration of the walls of the small vessels and the tissue surrounding them, leucocytes are found sprinkled in considerable numbers through the most degenerated tissue in the focus where it borders upon the hyaline material. These leucocytes are easily distinguished by their sharp staining from the greyish purple degenerated neuroglia nuclei which persist there.

Besides the leucocytes there are a few somewhat larger round cells with small single round nucleus and granular protoplasm. These appear to be analogous to the fat granule cells which are so common in inflammatory diseases of the nervous system of longer standing, they are however rather scarce, and although in a Marchi preparation they can be made out to contain blackened fat droplets, they are by no means a prominent feature in the section.

The process is therefore predominantly a destructive rather than an exudative one. To resume, we have an acute disease, rapidly fatal, producing large areas of complete destruction of the brain substance in which the anatomical elements are disintegrated and largely replaced by a colloid-like material. In the neighborhood the blood-vessels are acutely inflamed, there is exudation of leucocytes into the vessel walls, and throughout the

adjacent tissue, with passage of the red corpuscles into the perivascular lymph sheath and into the adjacent tissues, these focal extravasations giving the inflammatory process its haemorrhagic character.

The various forms of acute haemorrhagic encephalitis in man, as described by Wernicke, Strümpell, Friedmann and others seem, as a rule, to progress less rapidly and to be much less violently destructive than this form. Anatomically, however, the conditions are analogous.

In horses the disease is apparently fairly well recognized. Friedberger and Fröhner,* giving the bibliography, summarize the results of investigation into the pathology of acute encephalitis about as follows :

Local non-purulent encephalitis occurs in irregular, round foci, mostly of the size of a pea to that of a hen's egg, sometimes even involving a whole lobe of the brain, but not sharply limited. At first the place is slightly diffusely reddened, this being soon followed by a swelling and softening from serous exudation, when, according to Schütz, the cells of the neuroglia and the ganglion cells are swollen and granular, and finally undergo fatty degeneration ; the axis cylinders are varicose and the glia tissue infiltrated with small cells. The focus undergoes maceration, swelling and liquefaction, resulting finally in a softened mass consisting of disintegrated and fatty glia and ganglion cells, leucocytes and free fat-globular cells, and is spoken of as simple inflammation of the brain or inflammatory softening of the brain, distinguishable from ischaemic encephalomalacia by the exudation of leucocytes. This may be all, but often there are complicating haemorrhages giving rise to haemorrhagic inflammation of the brain. With the decomposition of the haemoglobin in such a focus the color disappears gradually and becomes yellowish. Then, as the mass of disintegrated tissue and exudate becomes more fluid, there is formed either a grey gelatinous mass or cyst, or finally a scar arises.

This description would apply to the cases described above fairly well except that the gelatinous fluid mass appears only at the end where the process is on the way to healing, whereas in our cases the brain substance throughout a large focus is quickly

* Lehrb. d. spec. Path. u. Therap. d. Haustiere, Bd. ii, p. 79, 2te Aufl., Stuttgart, 1889.

reduced to a gelatinous, structureless mass of necrotic and hyaline material.

The single case of our series in which recovery from the disease had occurred showed in the frontal lobe of one hemisphere a depression which on section of the brain corresponded with an elongated, gray, translucent scar which ran deep into the substance of the brain. This microscopically showed only a loose granulation tissue with numerous cells resembling the fat granule cells. Of course, whether or not it was really the end product of such a condition as described above depends on the accuracy of the diagnosis, but as the symptoms are fairly characteristic and the scarred condition of the brain about what might be expected as the final result of the anatomical process, it seems probable that this was an instance of recovery from the affection here described.

Addendum.—Since the above was sent to press there has occurred another outbreak of the disease in southern Maryland in the course of which great numbers of horses have died. We were able to make three autopsies on animals in which the symptoms during life were such as are described above. The two horses when seen were comatose, while the third animal—a mule—had died after a short but violent delirium. As the horses were obviously dying they were killed, but the autopsies revealed no recognizable macroscopic lesion. Microscopically, however, the vessels in the substance of the brain show in many places an acute inflammatory affection of and around their walls, and here and there in their neighborhood there is infiltration of the tissue with mononuclear, polymorphonuclear and eosinophilic leucocytes. No widespread destruction such as that described for the previous cases was found in these cases, and it is clear that they represent an earlier stage of the affection than that described above.

Bacteriological examination in these cases led also to no satisfactory results. Cultures from the organs of the horses were sterile except for occasional obvious contaminations. A rabbit inoculated with an emulsion of the brain substance of the mule,

which had been dead 48 hours, died with a general infection with a bacillus probably of the hog-cholera group and very virulent to rabbits. Further study of this organism will be made, but it is not likely that it has any relation to the disease in question.

DESCRIPTION OF PLATES I, II, III AND IV.

PLATE I.

Fig. 1. Photograph of a section through part of a focus of encephalitis showing the disintegration of the white matter, and the central hyaline substance.

Fig. 2. Ganglion cells which are losing their processes and becoming rounded—steps toward their complete disintegration.

PLATE II.

Fig. 3. Nerve fibres undergoing degeneration. The myelin sheath forms droplets or varicosities along the axis cylinder. Other highly refractive droplets are scattered about in the tissue.

Fig. 4. Central portion of a large focus showing the margin of the necrotic material and the central hyaline substance with vacuoles.

PLATE III.

Fig. 5. Small vessel with cellular infiltration of the wall, the perivascular lymph sheath being distended with blood.

PLATE IV.

Fig. 6. Similar vessel with extravasation of blood into its lymph sheath. The vessel is partly filled with a hyaline material.

Fig. 7. Section of the brain, showing the entire area of disintegration. Such a well marked case is rarely seen.

PLATE I.



FIGURE 1.

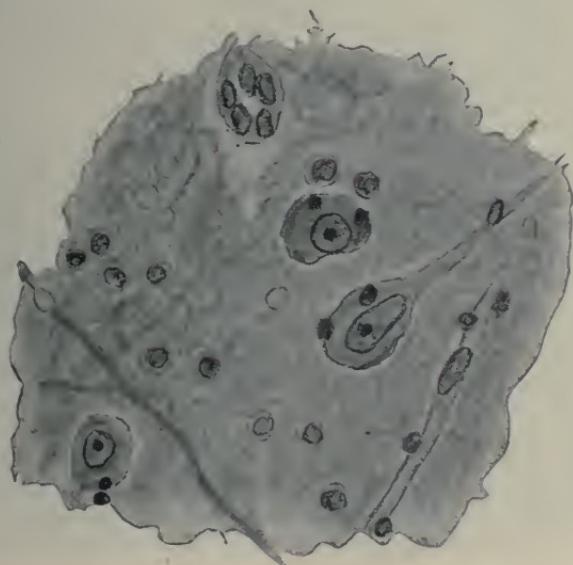


FIGURE 2.

PLATE II.

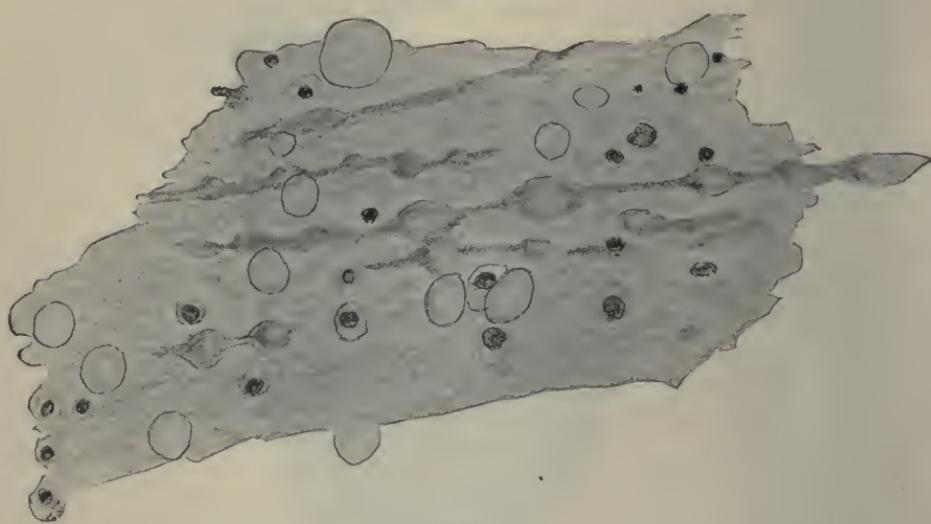


FIGURE 3.

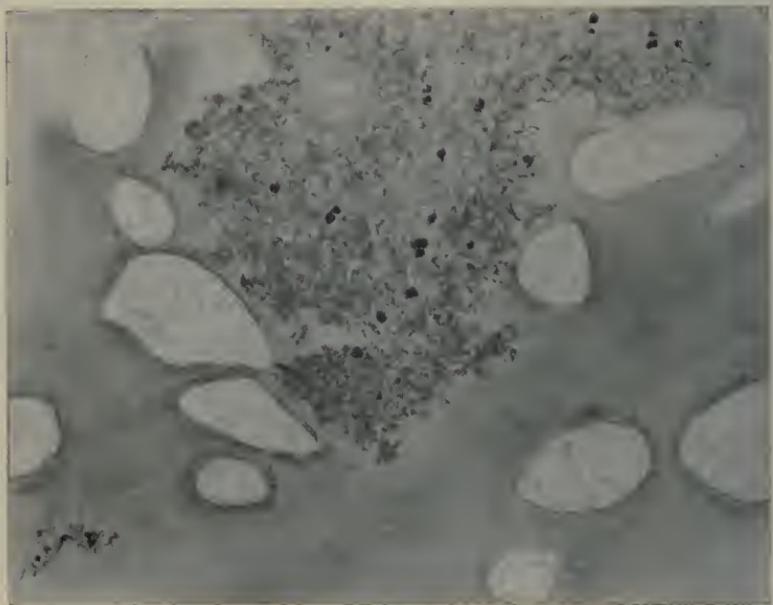


FIGURE 4.

PLATE III.

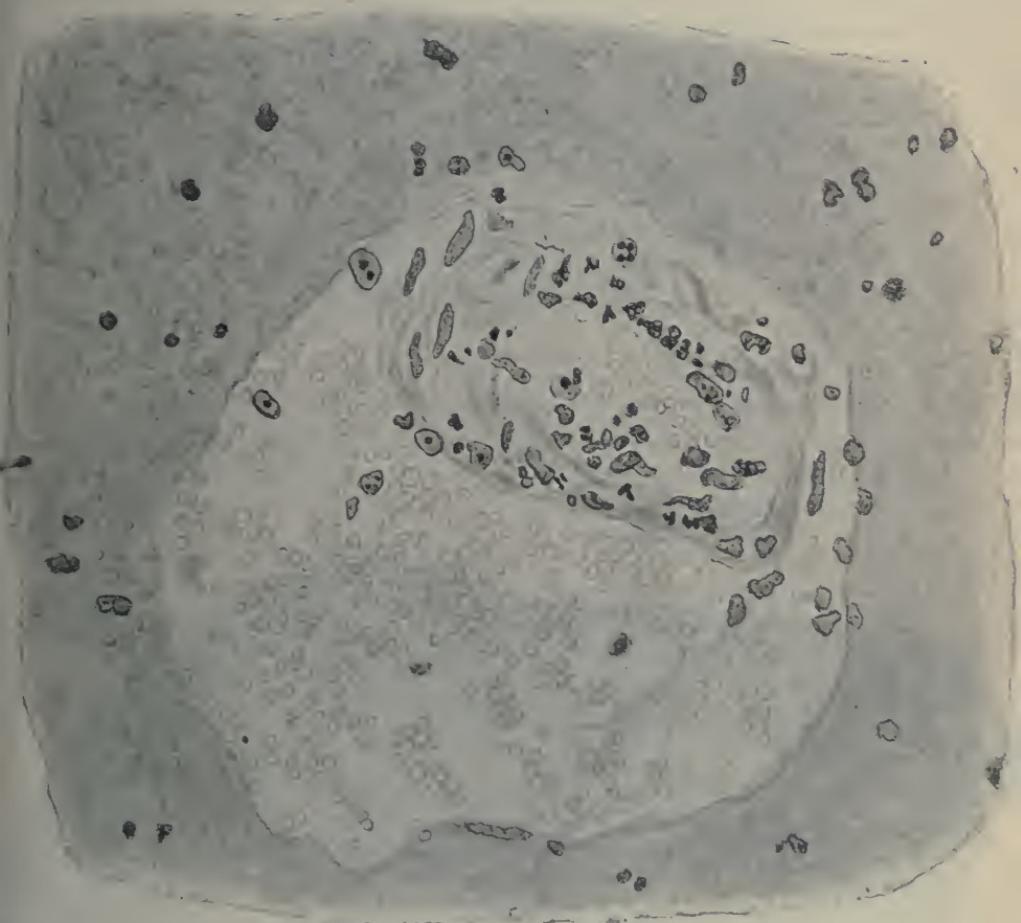


FIGURE 5.

PLATE IV.

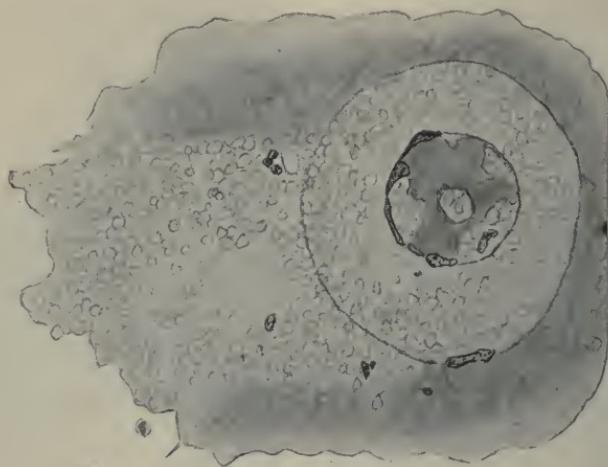


FIGURE 6.



FIGURE 7.

PARTURITION CASES.

BY WM. DRINKWATER, V. S.. MONTICELLO, IA.

Read before the 14th Annual Meeting of the Iowa State Veterinary Medical Association,
Feb. 11 and 12, 1902.

From an experience of nearly twenty years as a veterinarian in dairy districts, the writer would give some of his ideas with regard to parturition cases which test the ingenuity of practitioners of veterinary surgery.

The writer would advise the keeping of the instruments and appliances used in these cases in a convenient place, and, when one of these urgent calls is to be attended to, no time will be lost looking for the outfit. The instruments preferred are a repeller, or crotch ; two hooks six inches long, one sharp and the other blunt pointed, each one with the eye for the rope made large enough to place a loop of rope through, thus avoiding the necessity of putting one cord in and pulling it through ; two curved embryotomy knives to cut by pulling toward the operator ; a saw to sever leg bones when they cannot be turned without risk of lacerating the uterus ; two small ropes each six feet long, sash cord preferred ; an injection pump ; a bottle of creolin, and a large piece of tar soap. The writer has, for cases where it is difficult to keep the patient in a standing position, or where the animal is lying down and needs to be raised, a set of pulleys, which consists of one double pulley to attach to a pole or beam overhead in the stable, and two single pulleys ; also, forty feet of rope one-half inch in diameter, rigged by passing twice through the double pulley and once to each single pulley which is attached to loops of rope passed inside of each thigh of the mare or cow. The last, and a very important part, is a pair of waterproof overalls, a pair of rubber overshoes, and an old coat with the sleeves cut off at the shoulders, with an elastic cord run around the armholes to draw them in, so as to protect the clothing of the operator.

We are called in only after the owner or some one else has failed to relieve the distressed animal and we must be prepared for hard work. It is usually well to dress for the operation first

of all, as when one gets started he may find what appears to be simple very difficult before he is done with it. First lather the hands and arms well with the tar soap and wash out the vagina and as much of the uterus and foetus as possible with a creolin douche by aid of the injection pump and examine carefully all around the foetus and walls of the uterus for any lacerations which may have been made by some one who has failed to relieve the dystokia. If a rupture or large laceration is found, inform the owner at once and advise him that further work is useless as it is a rare case that survives such lesions; but if he insists that you remove the foetus, this may be done, but no hope of recovery of the mother should be given.

What the difficulty with the foetus may be is for the operator to determine. He must use his best judgment in rectifying the position. He should be deliberate and careful in his action, avoiding too great haste. He should make every move count and use great care not to bruise, lacerate or rupture any of the parts of the mother. When ready to extract, the cords may be applied to the legs and considerable force used. If the foetus is dead, the hooks may be inserted where the firmest holds are found. When the foetus has been dead for a considerable time it is generally bloated and too large for extraction. Then the hooked knife may be passed up under each of the presenting legs, the skin ripped toward the operator, the hand pushed up under the skin separating it from the muscles, the rope attached and the limb pulled off the body. Sometimes the abdomen may be ripped open and the intestines removed to reduce the size of the foetus. If the reduction is made and most of the skin is left, it may be pulled into the vagina and ropes or hooks attached to the skin or solid parts and the bystanders may be given something to do. When removal is accomplished a pail of warm soft water with creolin enough added to make it quite white should be at hand and the uterus flooded. If the patient does not expel it in a few minutes, the hose can be taken off the injection pump, one end placed in the uterus and the other end dropped on the stable floor or gutter and the fluid thus siphoned

out. This may be repeated. If the placenta has not loosened enough to be removed, you may direct the owner to inform you if it is not expelled by the next day and you can return and remove and wash out the uterus again. Last of all to smear the vagina and sore parts with pure creolin.

The writer would not attempt to describe all the malpresentations and deformities that are met with in veterinary obstetrics and does not assume that he is an expert in parturition cases, but gives some of his ideas of the managing of these cases, and hopes to bring up some points for discussion which may be of benefit to the members of this association.

DISCUSSION.

Dr. Heck said that the removal of a putrid foetus is a very difficult operation. He questioned if the undertaking would not be facilitated by injecting into the foetus a quantity of a strong disinfecting and deodorizing substance as, for instance, formaldehyde or carbolic acid. He said that the injection of a carbolic acid solution into the uterus of a sow containing putrid foetuses will overcome the bad odor and render the foetuses much easier of removal.

Dr. D. H. Miller and *Dr. Scott* thought that creolin was not to be recommended for use as a uterine douche, as it is apt to bring on straining.

Dr. Lyford recommends the use of some bland oil, as linseed oil or cottonseed oil, in large quantities, to be pumped into the uterus and vagina in cases where the foetus is dry and hard to extract. One to three gallons may be needed. In one case he used 10 gallons. Raw eggs in large quantities make a good lubricant and may be used if available and expense does not forbid.

Dr. Scott uses lard in large quantities as a lubricant.

IN "Reports of Cases" this month, Dr. H. C. Simpson, of Denison, Iowa, tells about a case of "Chronic Atrophic Orchitis in a Bull," saying that the owner was advised to give one drachm of iodide of potassium twice a day until iodism was produced. We wonder how long it would take to produce such effects from that quantity.

REPORTS OF CASES.

"Careful observation makes a skillful practitioner, but his skill dies with him. By recording his observations, he adds to the knowledge of his profession, and assists by his fact in building up the solid edifice of pathological science."

RUPTURE OF THE RIGHT AURICLE.

By C. E. BURCHSTEAD, M. D. V., Exeter, N. H.

On Jan. 25th, 1902, was called to see a gelding that fell during work (farm work); the owner gave the following history: Preceding the date of visit, about a year, had been breathing hard as though troubled with the heaves; for the last two weeks he would drop after working a short time. After lying a few moments, he would resume work again, but getting worse every time he was worked. These spells occurred at shorter intervals. The morning of my visit he had worked hauling wood for about two hours, when he went down. He had been stopped when they had found the spell coming on. Found him standing in yard eating hay, apparently well, with pulse smaller and weaker than normal. There was nothing to indicate a diseased condition of any organ, but they said that he had frothed and bled at the nose, the membranes of course being slightly congested, but the conjunctiva was rather paler than normal. Upon auscultation found nothing to lead to any pulmonary trouble, the heart showing no murmurs. Suspecting thrombus had the animal trotted, and in about five minutes he began to drag his hind quarters, in another moment syncope occurred and he fell. Examined pulse and found it bounding; dyspnoea and frothing at the nose; upon rectal manipulation found posterior aorta and iliac arteries full and bounding, no spasms of posterior limbs; observed that all superficial vessels were dilated and maxillary artery as large as small finger; visible membranes now injected. He arose to his feet without aid in about five minutes. I then auscultated lungs and heart; there was an hyper resonant sound of former, very forcible heart's action, but did not detect any murmur, intermittency, etc.; the cardinal symptoms of insufficiency, stenosis, and all that goes to identify organic trouble were undetected in my examination. I diagnosed some trouble in large vessels and possibly in pulmonary artery, or possibly aneurism, and gave a very grave prognosis and advised destruction. I asked owner if he wished any other advice, and he assured me he was satisfied with mine; told him that treatment

was useless. I asked him to let me know when the animal died, which he did on February 11.

Upon inquiring upon that visit, was told that he died that morning without much trouble, that he commenced to breathe heavily and fell, and with a few struggles he died. I repaired to make an autopsy with a few guesses up my sleeve. In opening up the abdominal cavity I found some ascites present; the intestines seemed to be oedematous, the liver enlarged, engorged and friable; the kidneys apparently from macroscopic view were normal. I then removed lungs, and heart and found in thoracic cavity large quantities of fluid, similar to that found in abdominal cavity; in severing the large vessels I found ante-mortem clots in all as far as could be traced. The pericardium when opened gave vent to ante and post-mortem clots; in fact, all large vessels connecting heart showed these clots. In opening the left ventricle and auricle found the same condition; in opening the right ventricle and auricle they were found empty, probably due to an opening large enough to admit large finger in the right wall of auricle, the blood having passed into pericardium. This rupture was ragged and showed signs of degeneration of surrounding tissue apparently of long existence, the rent in the muscular coat being about three inches, the perforation being less than an inch. The lungs were found to be anaemic, and antemortem clots, in bronchi leading into parenchyma, when cut nothing but air escaping, froth in all larger bronchi; found stricture of cesophagus in thoracic third, which accounts for inappetance and length of time in consuming meals. Now, what was the cause of the rupture? What relation did stricture, if any, have to rupture? The condition of liver was probably due to venous stasis of the vena cava and sublobular and intralobular veins caused by regurgitation of blood from auricle, due to inability to contract and propel the blood into the right ventricle. By reason of disability of muscular coat, I might mention that there was oedema along the belly.

I regret that the incomplete autopsy makes this a clinical, more than a pathological report, though I found refuge in the autopsy. I have never been entirely satisfied with my diagnosis, though the former verifies my prognosis. I could find no indication of organic trouble in the heart as dilatation or hypertrophy to show any compensation (except pathological condition of liver), showing probably that the heart was in a eusystolic condition when at rest. Should like to hear of any similar case or would kindly accept any due criticism.

ANTHRAX IN A HORSE.*
By W. HAMILTON, V. S., Boone, Ia.

The subject of this report was a bay gelding, about 17 years old, in good condition, weighing about 1300 lbs., and having a previous history of good health. On November 9, 1901, the horse was noticed to be a little stiff in the left hind leg, but no swelling or fever was perceptible to the owner. Appetite was good up to the morning of the 10th. At this time the owner noticed that the animal was unable to stand around in the stall, and was terribly swollen over the left hip. About the centre of the swelling was a small round hole about the size of a puncture made by a shingle nail, from which was exuding a dark colored fluid mixed with gas and having the disagreeable odor of decaying tissue.

I arrived at the place about 11 o'clock, and found the subject standing on the barn floor with the left hind leg flexed at fetlock joint so that the front part of the joint was nearly touching the floor. There was a twitching of the muscles back of the shoulders and in the flank of the right side, and a peculiarly anxious expression of the face. Temperature was 103° F., pulse 70 and wiry. At intervals of from five to twenty minutes there was violent straining as if to expel either water or faeces, although there had been natural passages previous to the straining. The swelling over the left hip extended from the anterior border of the ilium to the hock joint and was cold and insensible. I made a couple of deep incisions in the swelling, but could not discern the least evidence that this gave him any pain. The swelling resembled the swelling of blackleg in cattle, only it was more tense and the crackling of air under the skin could not be induced by pressure, although there was gas escaping from the hole before described and from the incisions made by the knife along with the dark red liquid, which was of a very disagreeable odor. About 3 o'clock in the afternoon the horse sank to the ground and lay flat upon the side most of the time, except when the spells of tenesmus would come on, when once or twice he got up on the front legs, but never made any attempt to raise himself behind. He continued about the same until 7 o'clock of the 10th, when he succumbed.

There was no treatment of any kind prescribed. On the 11th I went to the place with the intention of making a careful post-mortem examination, but the smell and surroundings were

* Read before the 14th Annual Meeting of the Iowa State Veterinary Medical Association, Feb. 11 and 12, 1902.

almost unbearable, so I was content with a very superficial examination. The external appearance was much the same all over the body as the left hind leg had been the day previous, the swelling extending over the entire body, the skin being so tense as to cause it to rupture on the median line and around the rectum and sheath. After putting on rubber gloves I opened the body along the median line. There was considerable serum in the connective tissue; the kidneys were very soft and almost ready to break down. The spleen was very much enlarged for two-thirds of its length and dark colored. I removed and took away with me a piece of the spleen and the liver. From the blood squeezed out of the spleen I inoculated a rabbit, which died in less than 24 hours, and also prepared two specimens for the microscope. These were colored with methylene blue. Both Dr. Lindahl, a physician of Boone, and myself examined them and were satisfied that there were present plenty of anthrax bacilli.

DISCUSSION.

Dr. Gibson said the symptoms described were not those of anthrax, and that he could not accept the diagnosis of anthrax. At the request of a member he described briefly the symptoms of anthrax in the horse as seen by himself.

Dr. C. E. Stewart reported a very interesting experience with anthrax within the past two years. Two years ago eleven cows and twenty hogs died suddenly. On investigation he made a diagnosis of anthrax. These animals were infected by feeding in a pasture over which a cow which had died suddenly of what he supposed was anthrax had been dragged. He vaccinated the other animals on the farm and the disease did not spread further. Last year a cow died of what he supposes was anthrax. The carcass was allowed to lie unburied in the pasture. Later four horses were put into the pasture. They made a resting place of the spot where the carcass had lain. Within a short time they all became sick, showed symptoms of anthrax and died within a day. Three dogs that had eaten of the carcasses took sick and two of them died.

CHRONIC ATROPHIC ORCHITIS IN A BULL.*

By H. C. SIMPSON, D. V. S., Denison, Ia.

In the spring of 1901 I was called to see a valuable bull, 10th Laird of Estill, property of Mr. McHenry. Accompanied by

* Read before the 14th Annual Meeting of the Iowa State Veterinary Medical Association, Feb. 11 and 12, 1902.

Dr. Gibson I examined the animal and found the left side of the scrotum enlarged. It was about eight inches in diameter at the base, and on warm days it was said to hang nearly to the ground; was hard, tense, and not tender to pressure. The right side of the scrotum and the right testicle appeared normal, except that it also was hanging somewhat lower, the other side pulling it down.

The cause assigned for this condition was that the bull was supposed to have been kicked by a negro attendant about one year previous. The animal had been shown the previous summer with this enlarged testicle at a number of State fairs and had won continuously, but the condition was fast becoming worse and it was evident that something had to be done. On account of the value of 10th Laird, Mr. McHenry having paid \$1200 for him, we hesitated about advising castration, as neither of us had heard of a case where the animal's usefulness as a sire was preserved after removal of one testicle, so at that time we advised iodide of potassium, one dram twice daily until iodism was produced, the administration then to be discontinued and resumed again shortly. No corn was to be fed while under treatment. Also an iodine ointment was to be applied twice daily externally and well rubbed in. The ointment was made by rubbing up the iodine crystals in sulphuric ether and then mixing with lard. This form of medication was given a thorough trial, but with no good results that we could see, so it was decided to operate. The animal was prepared by dieting a few days. Owing to his size and weight, 2100 pounds, we were at a loss to know how to cast him, but finally decided to use an ordinary casting harness and side lines. In addition to this we looped a rope around his body, all of which came in handy, as the animal broke the harness. There was plenty of help, but he gave all of us a tussle before he went down. The scrotum and surrounding parts were thoroughly disinfected with a chloro-naphtholeum solution. The instruments were immersed in a bucket of the same solution. A puncture was made through the skin near the body and a trocar and canula inserted full length toward the external inguinal ring, but nothing was found. The skin was normal, but the subjacent tissues were very much thickened, there being $1\frac{1}{2}$ inches of newly formed tissue to go through before reaching testicle. The connective tissue around the testicle was broken down with the hands. One end of the ecraseur chain was put around the cord as high up as possible, and after rendering it fairly tight, the cord, which was over one

inch in diameter, was ligated. Then the chain was loosened and slipped down toward the testicle a short distance and again tightened until the cord was cut in two. Afterwards all loose tissue was removed, the wound was washed out thoroughly, packed with cotton saturated in chloro-naphtholeum solution, and the animal allowed to rise. After-treatment consisted in daily flushing out with chloro-naphtholeum solution. The wound healed well. The other side of the scrotum has contracted to normal shape and a person seeing the bull now would never know that anything had been wrong with him. In regard to his breeding, it may be said that he had sired four good, strong, healthy calves before being operated upon. Last autumn after the operation he served a number of cows, and has apparently impregnated them all, as none have come into heat since being served.

The testicle was packed in a box with ice and shipped to Dr. Repp at Iowa State College, who has examined it and can give the results of his examination.

DISCUSSION.

Dr. Meiman said that he has under his care a bull suffering in a way similar to Dr. Simpson's case, but that he has not been able to obtain the owner's consent to castration.

Dr. Repp described the microscopic appearance of the testicle and the capsule of connective tissue surrounding it. He stated that the disease was neither actinomycosis nor tuberculosis.

Dr. Gibson described the operation, saying it was much more difficult than castration when the testicles are normal.

Dr. Heck said that a steer under his care suffered from a necrotic process involving the sheath and skin of the abdomen which he thought was induced by foulness of the sheath. As a result the sheath and an area of skin about fifteen inches in diameter became separated and was cast off. This mass weighed over 30 pounds. The wound healed and the steer was sent to market in good condition a month later. The scar was hardly noticeable.

Dr. C. E. Stewart had a similar case.

Dr. D. H. Miller related an experience with abscess of the sheath of a bull which extended to the testicles and set up an acute orchitis. Relief was had by opening the abscess.

TETANUS—ANTITOXINE—DEATH.

By C. E. SHAW, D. V. M., Brooklyn, N. Y.

The patient was a bay gelding, nine years old, weighing

about ten hundred pounds, used as a police saddle horse, in the practice of Dr. Roscoe R. Bell. Feb. 9th we were called to see the animal, which was said to be suffering from colic. This impression was given by the patient pawing, in the stall. On arrival I found the well marked symptoms of tetanus, trismus included. Temperature and pulse were subnormal, profuse salivation, head extended and a little to one side, stiff awkward gait, with hocks turned out and tail curved. Membrana nictitans partially projecting. On careful examination no wound could be found, nor was there history of previous injury. The patient was placed in a darkened stall and the surroundings made as quiet as possible. He did not show much nervous excitement however. 30 cc. of tetanus antitoxine injected at 6 o'clock P. M.

Feb. 10th, patient about the same; pulse, 45; respiration, 60. 30 cc. of antitoxine injected at 11 o'clock A. M.

Feb. 11, patient growing weaker and more restless and unsteady on his feet. Continued to suck up oatmeal gruel. Injection per rectum given of glycerine dilute. 30 cc. antitoxine injected at 10 A. M.

Feb. 12, patient more restless; pulse weaker; respiration, 64 and labored. 30 cc. antitoxine injected.

Patient died 11 P. M.

While our efforts resulted in a glowing failure, it seems only fair that they should be reported, in view of the fact that too often the publicity of such results are buried, if possible, with the patient.

ACUTE STRINGHALT.

By C. E. SHAW, D. V. M., Brooklyn, N. Y.

The patient was a bay gelding, eight years old, weighing about eleven hundred pounds, in good hard working condition, being used for coach purposes in a livery stable. In the evening he was taken with stringhalt symptoms so severe that, without relief, the animal would have been absolutely worthless. Even at a slow walk either hind foot would be drawn to the abdomen and brought down with terrific force. The patient being of a nervous temperament and the previous day's work having been performed on very slippery streets, the owner was informed that the malady might be temporary and pass off as suddenly as it had appeared. Otherwise, the operation of peroneal tenotomy was advised.

The animal was given a bolus of aloes, 3 viij, nuc. vijn.,

3 j, and as soon as he became nauseated from the effects of the physic, the symptoms of stringhalt entirely disappeared and he was put to work in a few days, healthy as before.

While this particular solitary case does not prove nor disprove nor throw much light upon a subject so obscure at the best, I would bring it before the readers as contributing towards the theory of nervous irritability as a cause of stringhalt. And if it is a nervous affection I would inquire, why does peroneal tenotomy cure so many chronic cases?

LEUCOCYTHEMIA LESIONS OF THE SPLEEN.

Dr. Samuel S. Buckley, veterinarian to the Maryland Agricultural Experiment Station, College Park, Md., reports a case and forwards the accompanying photo of the spleen from a case of leucocytopenia from a large mare, following an old attack of lymphangitis.

[We beg leave to say to REVIEW readers that we shall be glad to reproduce photographs of interesting specimens which they will send us, since they are a great aid to the clear understanding of reports of cases occurring in practice.—EDITORS.]



DEPARTMENT OF SURGERY.

BY L. A. AND E. MERILLAT,

Chicago Veterinary College, 2537-39 State Street, Chicago, Ill.

ANTISEPTIC AND ASEPTIC PROTECTIVE DRESSING FOR WOUNDS.

BY G. W. KNORR.

I. General Principles Governing Antiseptic and Aseptic Dressings.—After learning the main principles governing the modern aseptic methods of performing operations, we come to the question of what dressings should be used for covering the wounds, and the discussion of the methods of applying surgical dressings. It is a part of surgical technique which requires indefatigable diligence and care, a correct application of dressing,

and a carefully conducted after-treatment of those who have been operated on, or wounded, are matters of great importance.

As we are aware that all infection of wounds is caused by micro-organisms, by the omnipresent bacteria, it follows that we should conduct the after-treatment in such a way so as to preserve it from damaging effects of, or rather produced by, micro-organisms, and with the same care that is used in performing an aseptic operation.

The surest and simplest way of preventing subsequent infection in a clean aseptic wound, such as one resulting from an operation, is to cover it if convenient, or environments of wound will allow, with a germ-free dressing, which has been sterilized by hot steam or formaldehyde sterilizer. In ordinary practice dressings are much used which have been impregnated with antiseptics like carbolic acid and mercury bichloride. That method is, however, the best which offers the greatest security against subsequent infection and most readily carries off and absorbs the discharge from the wound. We should and sometimes do, but not too often, operate without exception, according to the rules of *asepsis*, and consequently the same preventive measures should be carried out in the after-treatment of the wound until it is entirely healed. Infected wounds are to be cleansed as perfectly as possible from any dirt or foreign body which may be present, and are best disinfected by a 1-1000 solution of mercury bichloride.

The Most Common Antiseptic and Aseptic Treatment for Wounds.—The modern surgeon uses particularly:

(1) Antiseptic solutions for cleansing the wound and for disinfecting the materials used in dressings. The most suitable are three to five per cent. solutions of carbolic acid, and an aqueous solution of mercury bichloride 1-1000-5000. He also uses antiseptic powders, such as iodoform, dermatol, bismuth, and napthaline, for dusting over wounds, especially if they have the form of a cavity, or are not closed by sutures, or are already suppurating or granulating.

Instead of antiseptic solutions, sterile salt solution and sterile water are used upon the wounds.

(2) Absorbent material, such as unstarched gauze, mull, jute and cotton from which all fatty matter has been extracted. These are sterilized by subjecting same to steam heat at a temperature of 100°-130° C. in a sterilizing apparatus. The dressing materials impregnated with antiseptics, like carbolized and bichloride gauze, were formerly in very general use; but

it is cheaper and still simpler in sterilizing them by heating as has just been described, at a temperature of $100^{\circ}-120^{\circ}$ C. in appa. Moreover, it has been proved that dressing materials impregnated with antiseptics and kept in dry condition do not remain sterile, but after a certain time all sorts of bacteria have been cultivated by them (Schlauge, Ehlers, and others).

The surgeon no more uses for dressing wounds the material charpie, which was formerly much in vogue, and consisted of bundles of thread made by pulling to pieces bits of linen cloth. This material "charpie" has caused much harm; it was full of dirt and wound poisons, and so consequently has killed many a patient by exciting suppuration and various wound diseases. The dressing materials are fastened in place by ordinary cotton bandages, better if they were *mullin* a 3% phenol or 1-500-1000. Hg. Cl. Solution, and if possible gauze bandages applied over these. The bandages subsequently dry and causes the whole dressing to form a firm, well-fitting support. When it is necessary to immobilize an extremity, the dressing may be strengthened by adding splints of wood, metal, wire, or thin pliable hoop.

Of the numerous material used for aseptic and antiseptic dressing, the following list are some of the most common in use to-day, but more so in the human than in the domesticated animals, but owing to the expensiveness of some, only a very few are brought within the reach of the ordinary veterinarian, unless in canine practice and expensive or valuable animals.

Mull or Gauze.—The most extensively employed material is soft unfinished gauze or mull. This is most excellent for dressings, most often used in the smaller animals, being a very good absorbent. It is usually impregnated with antiseptic solutions, particularly mercury bichloride, acid carbolic, and iodoform. Other and cheaper materials are recommended as substitutes for the more expensive nulls; these are jute, moss, prepared moss, wood wool, etc.

Cotton.—This is not suitable for placing in direct contact with wounds, as it does not sufficiently absorb the secretions of same, and allows it to collect and decompose beneath same. It is considered a good practice at all times: first to cover wound with a thick layer of sterilized *gauze*, and secondly to cover this with a layer of *cotton*; this at all times proves to be satisfactory.

Lint.—This is rapidly losing its good qualities which at one time it attained, but even at the present time is very good, as where used as boric lint.

Jute.—This, also called Indian hemp, consists of the woody

fibres of corchoms. It is an elegant substitute for cotton. Flax, peat cotton, moss, and moss felt are very seldom used in veterinary practice.

Wood wool seems to gain the favor of some practitioners. This consists of wood which has been rubbed into small particles by a grindstone. This material has great powers of absorption, is soft, light, and cheap. This material is most often used, as when packed in gauze sacks. These dressings are most remarkable for their great absorptive powers and they can be left in place on large wounds for 2 or 3 weeks when the secretion of same will become dry in that time. This is always covered with a gauze dressing.

Wood fibre, wood wadding, marly scraps, and paper-wool are also used, but to no great extent.

The Different Antiseptics.—Of the various antiseptics which are employed in the treatment of wounds and for dressing purposes, carbolic acid and bichloride of mercury are most widely used. Since the introduction of asepsis the employment of antiseptics has diminished a great deal.

Carbolic Acid or Phenol ($C_6 H_6 O$).—It is very poisonous to animals and plants, used in strengths of $2\frac{1}{2}$ –3 per cent. aqueous solutions, for cleansing wounds, disinfecting instruments, etc. The 5 per cent. solution is used in wounds already affected. At present we avoid washing out a wound with 3 or 5 per cent. solution of phenol, an operation which was formerly very much in vogue, as we now know it is unnecessary and even dangerous in large wounds. *Gangrene* may easily result from their use.

Bichloride of Mercury (Hy. Cl₂) is one of the oldest drugs, and Koch showed that Hy. Cl₂, even in the solution of 1 to 330,000 prevented the growth of anthrax bacilli, and a solution of 1-1000-5000 almost instantly kill the spores. It being so poisonous, was at first looked upon with suspicion by surgeons, but now it is a great favorite among surgeons. It is most always used in disinfecting the field of operation, the hands, and the wounds in aqueous solution in from 1-1000-5000. It has besides its marked antiseptic qualities the advantage of being cheaper than phenol. It is not recommended for the disinfection of instruments, as we have seen, and for these a 3 per cent. solution of phenol is preferable. If solution has been made with ordinary water, an insoluble preparation of Hy. will soon form, which is thrown down by the alkaline carbonates in the water. To avoid this it has been recommended by some to use an addition of acids, especially salicylic, tartaric, and hydro-

chloric. The addition of am. muriate and sodium chloride is most preferred. Besides these two potent antiseptics, it has been recommended to use salicylic acid, acetate of aluminum, thymol, zinc chloride, boric acid, boric ointment, aseptin, bismuth and iodoform.

Iodoform ($C H I_3$) is a bright yellow crystalline powder, almost insoluble in water, acids, and alkalies, but readily soluble in ether, chloroform, alcohol, volatile oils and fats. It is a most potent antiseptic and is left to the judgment of the practitioner.

Substitutes of iodoform are as follows :

Iodoformin, iodoformol, iodoformogen, iodol, salubrol, salol, euophen, aristol, dermatol, orthoform, naphthalin, benzoic acid, sulpho-carbolate of zinc, alcohol, terebene, eucalyptus, iodine, creolin, peroxide of hydrogen, lysol, solveol, ichthyol, alumol.

Which antiseptics and which antiseptic dressing are the best?

Their number is without limit, and the choice, as we have remarked, is more or less a matter of taste. But the great principle involved remains the same, namely, that the operation must be conducted with the strictest attention to asepsis, and that the arrest of the haemorrhage, the drainage, and the suturing of wounds should all be carried out with greatest care. The fate of the patient who has been operated upon depends very largely upon whether the operation has been performed aseptically or not. The dressing that is put on the wound has no longer the importance which at one time was attached to it. It should consist of freshly sterilized material which has good absorptive power, gauze, cotton, moss, wood wool. All materials should be sterilized by steam at a temperature of 100° - 130° C. for twenty or thirty minutes in steam sterilizer. Dressings which have been impregnated with antiseptics become, after a time, less aseptic, and, furthermore, produce irritation of skin, and cause eczema. The wound, or suture line, is covered with several layers of sterilized gauze, or iodoform gauze, over this is placed cotton which has been sterilized by steam at a temperature of 100 C. (212 F.). The less the wound is irritated by antiseptics, or, in other words, the drier the operation, so much the less is the subsequent secretion from the wound, and there is consequently less need of dressing having great absorptive powers like moss pulp, etc.

All dry antiseptics are better than wet, occlusive variety, as the latter are apt to occasion an eczema, frequently lasting a good while, and increase the danger of poisoning, particularly from

phenol and Hy. Clr. solutions, but at times we may find that wet antiseptics are the thing especially for contused and suppurating wounds. Never apply iodoform, bismuth, salicylic, or boric acid to a wound which has been sutured. Dry powders are chiefly indicated in wounds which have not been closed by sutures, and for those which are granulating and suppurating. Open wounds are often packed with sterile or iodoform gauze, and then closed by sutures from 2 to 4 days after removing after packing.

For an ointment I prefer boric acid and plain vaseline.

[N. B.—“Surgery of the Eye, Ear, and Upper Air-Passages” will be continued in May number.—(L. A. M.)]

EXTRACTS FROM EXCHANGES.

GERMAN REVIEW.

By ADOLPH EICHHORN, D. V. S., Bureau of Animal Industry, Milwaukee, Wis.

CONGENITAL INFECTION OF THE FÖTUS IN CASES OF HÆMORRHAGIC SEPTICÆMIA.—Grijns in his work on hæmorrhagic septicæmia, reports the following: At the autopsy of two East Indian buffaloes, which suffered from the mentioned disease, each of the uteri contained a fœtus. Examining the same they showed pathological changes similar to those of the mother animals. In both cases the pericardium and the pleural sac contained a serous exudate. Under the pericardium and subpleura a great number of small blood extravasations were noticeable. The mucous membrane of the trachea and larynx was dark red in color; the submucosa manifested many hæmorrhages from the size of a pin's head to a rice seed. In both cases the typical small bipolaric rods were successfully proven. With all this, the diagnosis was confirmed by test inoculations.—(*Berl. Thierarzt. Woch.*)

TRANSMISSION OF TUBERCULOSIS.—Two butchers of the Berlin city abattoir, who were employed in transporting tuberculous cattle from the killing room to the collecting room of confiscated parts, proved on medical examination to be affected with skin tuberculosis (*lupus*).—(*Berl. Thierarzt. Woch.*)

CONGENITAL TUBERCULOSIS IN TWIN CALVES.—Zincke, as he reports in the *Rundschau*, examined the seven months old twin fœtuses of a cow, which proved to be in an advanced state

of tuberculosis ; the uterus also being affected. In one of the foetuses Z. found in the liver, also in the portal and bronchial glands, tubercles, which in the centre manifested caseous degeneration. In the second calf, outside of the organs mentioned in the first case, there was an infection of the mesenteric glands. The bacteriological examination revealed the presence of tubercle bacilli, which on inoculating test animals, produced tuberculosis. The infection Z. believes was transmitted from the tuberculous mucous membrane of the uterus, and therefore the tuberculosis may be considered as a placental or a phago-genic form.—(*Berl. Thierarzt. Woch.*)

AMPUTATION OF A UTERUS HORN IN A SO-CALLED PROLAPSE OF THE UTERUS [*Zoroastro*].—Z. found a cow which shortly before calved, with prolapse of the right horn of the uterus. As the organ was perforated and gangrenous, Z. undertook the amputation of the same, by ligating the part close under the vulva and replacing the stump. The cow during the following eight days showed uneasiness and gave less milk, but soon completely recovered.—(*La Clin. Vet.*)

SUPPURATIVE INFLAMMATION OF THE GUTTURAL POUCHES IN A HORSE, WITH A PERFORATION OF THE RIGHT TYMPANUM [*Durante Luca*].—The described case is of interest on account of its peculiarity, there being outside of the manifestations of the disorder a discharge of a slimy-purulent matter from the right ear. This could be artificially produced by pressing on the right guttural pouch. Treatment consisted in opening, draining, and irrigating the guttural pouch. An uneventful recovery took place.—[*Il Nuovo Ercolani*.]

THE "MAL DE CADERAS" OF HORSES IN SOUTH AMERICA [*O. Voges, Buenos Ayres*].—1. "Mal de Caderas" is a horse-sickness which occurs in the interior of South America ; southwards it extends to the Argentine provinces, St. Fé and Corrientes ; northwards it appears in the territories of Chaco, Missiones, Paraguay, Matto Grosso, and Bolivia. 2. In the wet, rainy season, the disease often appears with extraordinary violence, while in the dry season it almost disappears. 3. The disease attacks the horse, mule and ass, also the carpincho (waterhog). The percentage of this affection varies to a great extent, but it is almost unfailable that every affected animal succumbs. 5. The epizoötic, also clinical observations of this disease, were published by Rebourger and Leclerc. Malbrun and Zabala observed the highly infectious condition of the blood. The disease always runs a chronic course ; the duration

in the horse is from two to five months, in the ass and mule from six to twelve months. 7. The clinical symptoms are: Fever with intermissions, slow emaciation, periodically haemoglobinuria. Towards the termination of the disease a sort of paraplegia manifests itself (hence the name "mal de caderas"), so that the animal shows a staggering, dragging gait. In the course of the disease, the number of the red blood corpuscles become enormously diminished; the same way is reduced the sensibility of the animal. On section there is an enlargement of the spleen and lymph-glands, also changes in the spinal cord. 8. The blood in every state of the disease contains the exciting cause. Leclerc mentions as cause a sort of bacterium coli. Blood abstracted in a strictly sterile way, does not contain bacteria of any kind; also cultures in all the employed media remain sterile for over a year, notwithstanding the blood is infectious. 9. The disease is transmissible by inoculations, if using only a fraction of a drop of blood. Through ingestion the disease cannot be produced. In the laboratory (during three years) spontaneous infections were observed. 10. The adoption appears justified, that the transmission takes place through a blood-sucking medium. The same lives very likely only in the infected districts, as a spread of the epizoötic to other countries was not observed. The transmitter so far is unknown. 11. The disease can be transmitted by inoculations of the blood to all known domestic and laboratory animals, causing death in white and gray mice, white and gray rats, rabbits (seldom guinea-pigs), dogs, goats, sheep, hens, ducks, apes, etc. 12. As cause of the disease the author discovered a living organism which belongs to the line of the trypanosomas, and which is named by the author as *trypanosoma equina*. This trypanosoma may be distinguished from other trypanosomas. 13. The author succeeded in dyeing this trypanosoma with Romanovsky's dyeing method and to study its development. The same has a double nucleus similar to rat trypanosoma. In different animals this trypanosoma appears periodically, almost disappearing at certain periods. 14. Experiments were performed to treat the horses with therapeutic agents used in other blood infectious diseases, such as metylen blue, arsenic, enterol, permanganate of potass., etc., without succeeding in saving one of the diseased animals. 15. The phenomenon of agglutination was observed in the suspended drop, but this is by no means specific, as the same result may be obtained from different normal sera. The author will report the relation of the trypanosoma to spe-

cific serums in another publication, as it is rather difficult to give a sufficiently plain description in a short thesis.—(*Berl. Thierarzt. Woch.*) [Very extensive and interesting investigations of this disease were published by the French bacteriologist, Dr. L. Elinassian, who made a careful study of the disease in Paraguay. Regarding its cause, pathology, etc., he came to the same conclusion as Dr. Voges.—A. E.]

ENGLISH REVIEW.

By Prof. A. LIAUTARD, M. D., V. M.

FOREIGN BODY IN HORSE'S TONGUE [*A. Peele, M.R.C.V.S.*].—Any addition to the history of foreign bodies in the organism is always interesting and of value. The author recalls three cases of their presence in horse's tongue. A first case that of a cart horse, which was off his food. Examining his teeth, the tongue is observed bluish in color and swollen towards the left side at the base. On manipulating it the doctor pricked his finger, and extracted a piece of wire $2\frac{1}{2}$ inches. In a second case, a hard swelling was found on the left side of the tongue of a mare which would not eat, and slobbered at the mouth. Again another piece of wire, two inches long, was found in the tongue. In a third case, with somewhat similar history and similar symptoms, there was removed from the tongue an old darning needle with the point bent and the eye broken. These three cases carry an important indication, viz., not to overlook minute examinations of the tongue in cases where symptoms of interrupted mastication or similar disturbances may be manifested.—(*Veterin. Journal.*)

FOREIGN SUBSTANCE IN A HORSE'S MOUTH [*Arthur New, M. R. C. V. S.*].—Under this title the author records the history of a horse which was brought to him because of his not eating, and which was slobbering at the mouth. On examining this cavity he found wedged between the fourth molars a piece of wood $4\frac{1}{2}$ inches long and $1\frac{1}{2}$ wide, which, on being removed, cured the horse. Mr. N. adds: "The case is, I think rare in horses, never having seen a similar one.—(*Vet. Record.*) [It is strange, but a very similar case was published by Dr. O'Donnell in 1886, and recorded in Vol. X, page 368, of the AMERICAN VETERINARY REVIEW. In this animal the foreign body occupied the same location, between the 4th molars.—A. L.).] [And, stranger yet, an identical case occurred in my

practice two years ago.—(R. R. B.)]. * * * * In the same class of foreign bodies can be recorded that of E. H. Pratt, who tells of a mare which was left tied to a hedge for a little while after dinner. She worked well during the afternoon, but when home at night she was unable to eat. On examination, a briar was found in the median line of the posterior part of the mouth, apparently partly swallowed. It was necessary to cast the animal to extract it. It measured 18 inches in length and was about as thick as a lead pencil. It carried lots of thorns curved in the wrong direction for its extraction and doing harm.—(*Vet. Record.*)

INTRACEREBRAL INJECTION OF ANTITETANINE FOR THE CURE OF TETANUS IN THE HORSE [*Sydney Villar, F. R. C. V. S.*].—This records two successful applications of the treatment, one in a subacute, the other in a very acute case. The former, a trick pony belonging to a traveling circus, had been sick and gradually growing worse since nine days. At that time, after careful antiseptic measures the cranium was trephined on the right side, about one inch from the median line, and 3 cc. of pure antitetanine were injected into the substance of the cerebral hemisphere. No immediate effects were noticed. After twenty-four hours "there was a marked abatement of the tetanic symptoms, and during the next ten days the symptoms gradually diminished and ultimately disappeared." The second case was a hunter, which manifested tetanus 21 days after receiving a punctured wound of one hind leg. On the third day from the appearance of the disease 8 cc. of pure antitetanine were pushed into the cranial contents to a depth of 2 inches. Immediately after a severe nervous crisis occurred, which lasted five minutes and passed off. The next day, the tetanic symptoms had considerably diminished and recovery set in gradually without any other bad effects. In other cases the author proposes to inject both hemispheres to shorten the time of recovery.—(*Journ. Comp. Path. and Therap.*)

COMPOUND FRACTURE OF THE SCAPULA—SUCCESSFUL REMOVAL OF THE DETACHED SPINE [*R. Lewis Green, M. R. C. V. S.*]—A chestnut cob, driven to a phæton, was run into by a horse and cart, and the shaft entering the muscles of the shoulder fractured the scapula, detaching a piece of it extending from about two inches above the cavity up to the cartilage of prolongation. Removal of the loose piece was decided upon, and done with much difficulty on account of firm attachments of the muscle, which to be overcome required a great deal of force. The

author, however, succeeded and cut off a piece of the scapula measuring $9\frac{3}{4}$ inches in length and 3 in width. The supraspinous spine of the scapula had also sustained a fracture. It was separated from the principal mass much easier; it measured 4 inches by $1\frac{3}{4}$. The large gap left was plugged with cyanide gauze, dusted with boric acid and sprinkled with chinosol and closed with three sutures. No suppuration being formed after 48 hours, the dressing was renewed and the wound dressed afterward with antiseptic lotions, bichlorid of mercury $\frac{1}{1000}$, carbolic acid, $\frac{1}{20}$. Granulations went on well and without complications; the pony was soon able to resume work, first with a breast collar and after six weeks with his ordinary harness. (*Journ. Comp. Path. and Therap.*)

INTESTINAL OBSTRUCTION CAUSED BY TUMOR [*A. Peele M. R. C. V. S.*].—A half-bred mare, left in good condition at night, was found the next morning suffering acutely with abdominal pain, straining, etc. Rectal examination failed to detect anything except that the bowels seemed to become constricted as the hand was introduced. Treatment of aloes, tincture of opium, and chlorodyne, with rectal injections, was prescribed; but the mare gradually sank and died. At post-mortem an enormous tumor was found in the sub-lumbar region, to which the intestines were somewhat adherent. The tumor weighed about 20 pounds, and consisted of a network of fibrous tissue enveloping fat. The lowest part of the tumor was very prominent and fluctuating. There were here and there blood vessels, and in the lower portion of the mass there was a quart of bloody serum. The animal had been three years in the possession of the owner and had never been sick. The author thinks he ought to have detected the tumor in making examination per rectum.—(*Veterin. Journal.*) [So do we!]

BIBLIOGRAPHY.

TUBERCULOSIS OF CATTLE, AND THE PENNSYLVANIA PLAN FOR ITS REPRESSION. By Leonard Pearson, B.S., V.M.D., State Veterinarian, and M. P. Ravenel, M.D.

This is bulletin No. 75, issued by the Department of Agriculture of the Commonwealth of Pennsylvania, and is one of the most complete documents on the subject which has been written by a State Veterinarian in the United States. Dr. Pearson is well known by all of us, we know his energy, his ability, and the earnestness with which he works, and of the honesty

with which he accomplishes his duties, and those qualities are sufficient vouchers for the conscientiousness with which the bulletin has been written. His collaborator, Dr. M. P. Ravenel, is also well known among veterinarians, and the parts which he has treated in the report are most valuable contributions, especially at the present time, when the subject of Koch's new theory is in the minds of all those who are interested in tuberculosis; and who in the medical and veterinary world is not?

The report of Drs. Pearson and Ravenel is divided into ten chapters.

After entering into the *general considerations* by Chapter I, the following one takes hold of the *cause of tuberculosis and of the influences that govern its spread*. Its primary cause is the *tubercle bacillus*, and anything that facilitates its entrance into the organism of an animal or bring animals into condition more favorable to its growth is a secondary or accessory cause of tuberculosis.

Chapter III relates to a subject which is the order of the times: *Relation of bovine tuberculosis to public health*. This is by Dr. Ravenel. For those who have read on the subject, many parts of this chapter are already familiar, at least here I have had the good fortune to read them. Remarks on the work of Willemin, the experiments of Chauveau, of Cohnheim, the discovery of Koch, etc., are subjects that no veterinarian can be ignorant of.

In Chapter IV, the *disposition of the flesh of tubercular cattle* is considered, and after remarks on the flesh containing tubercle bacilli, how tuberculosis spreads in the body, after giving the regulations of Prussia, Bavaria, Saxony and England and some of those in Pennsylvania, a summary says: *Tubercular cattle should be very carefully examined at the time of slaughter and the disposition of the flesh should depend upon the character and extent of the lesions that are found*.

Chapters V and VI are again due to Dr. Ravenel. In the first the author considers the *morbid anatomy*. Human tuberculosis first, and then bovine, with its peculiar form of grape disease, are examined. And in Chapter VI we enter into the scientific work of the *Bacteriology of Tuberculosis*. The description of the bacillus, its biological history, tuberculosis of birds, that of fish, the original tuberculin and the newer as well as the oxytuberculin of American discovery, all form a very interesting part.

Chapter VII gives the *generation and symptoms of tuber-*

culosis, and is followed by Chapter VIII on the *recognition of tuberculosis in living cattle and the tuberculin test*. We do not know if there are still people in the United States who can object to the tuberculin test, but if there are the reading of this chapter will quickly convince them of their folly.

Chapter IX treats of the *prevention and suppression of tuberculosis of cattle* (the important question of the day for all agricultural countries). In his summary Dr. Pearson says : "The various measures to rid herds of tuberculosis may be classed under four heads : (1) by improved and salubrious conditions of life ; the suppression by good sanitary conditions ; but it is not practicable, nor is it safe to rely upon it ; (2) the suppression by good sanitary conditions with removal from the herd of all animals with physical signs of the disease. So long as this method was relied on, tuberculosis spread rapidly in all parts of the world that it had reached ; (3) the suppression by removal of tubercular animals as detected by physical examination and tuberculin test. The removal of the diseased cattle is followed by disinfection and improved sanitation. The Danish system and the Pennsylvania plans come under this heading ; (4) the suppression by quarantining infected and exposed cattle and rearing their progeny in separate herds, thus raising a new sound herd while the old one dies off in time and the disease with it ; but, as Prof. Bang says, *owners of cattle ought to prevent the contamination of calves and other animals still healthy*.

In this chapter the measures in general are considered : compulsory methods, voluntary measures, and the methods of various European countries, with those of various States in the Union.

Chapter X treats of the *Pennsylvania plan to control the disease*, and is followed by reports from herd owners on their losses from tuberculosis and the condition of infected herds.

An appendix on *Tuberculosis of Cattle*, by Prof. B. Bang, of Copenhagen, closes the bulletin.



Through the kindness of State Veterinarian Leonard Pearson, we have received also bulletin No. 74, on the *Repression of Tuberculosis of Cattle by Sanitation* ; and also bulletin No. 79 on *Rabies*, by Dr. M. P. Ravenel, the Bacteriologist of the State Live Stock Sanitary Board of Pennsylvania. Its perusal will prove very interesting to veterinarians, as it treats extensively

of all points connected with rabies, its history, cause, varieties of type, rabies of man, dogs, cats, horses, cows, birds, prevention, eradication, etc.

A. L.

AMERICAN VETERINARY MEDICAL ASSOCIATION : Proceedings of the Session of 1901.
Edited by the Publication Committee, M. H. Reynolds, Chairman.

Progress marks everything connected with the American veterinary profession, not excepting the publication of the proceedings of its national organization. Reaching its members a little later than for several years past, through no fault of the committee, it repays the recipients by being superior to any that they have ever received, in the quality and quantity of its contents, while the work of the printers is of a much higher grade than ever before. The association can well feel proud of this volume, for it is by far the most pretentious work of the kind issued probably in the world. As a library volume it is of great value to its possessor, and renders the work of the convention at Atlantic City doubly valuable to those who attended by being placed in permanent form for study and reference, and gives a dignity and worth to the events which could be secured in no other way. Chairman Reynolds is entitled to the plaudits of the whole profession for the success which has crowned his very arduous and earnest work.

OBITUARY.

LOXLA EDWARDS, D. V. S.

Dr. Edwards, assistant to Dr. C. Barnwell Robinson, of Washington, D. C., died on Feb. 25, at Dr. Robinson's residence, 222 C Street, N. W., of pneumonia, after an illness of four weeks. He was a graduate of the United States College of Veterinary Surgeons, class of 1901, his home being at Opelika, Ala. He was a young man of great promise in his profession, was 27 years old, and unmarried. His body was taken to Alabama by his parents, and the remains were escorted to the depot by the students of his *alma mater*.

The following resolutions were adopted by the members of the Washington Veterinary Association in memory of their late friend and fellow, Dr. Loxla Edwards :

WHEREAS, The Good God has deemed it wise and expedient to take from our midst our esteemed and honored colleague, Dr. Edwards, late Assistant and House Surgeon of the United States College of Veterinary Surgeons, Washington, D. C.

Resolved, That by the death of Dr. Loxla Edwards, we lose a most

earnest and devoted member of the profession. Suddenly, when life seemed brightest and health vigorous and permanent, in the twinkling of an eye, his soul passed into eternity, and his life, so filled with hopes of usefulness, sank to struggle no more with earth's waves and billows. His life was a truly noble one, and the loss is irreparable.

Resolved, That to the family of our deceased member we extend our heartfelt sympathy, earnestly praying that in this sad bereavement they may find consolation in the belief that he has joined his Creator within the Portal Gates of Heaven.

Resolved, That a copy of these resolutions be spread on the minutes of this association and a copy be forwarded to the bereaved family.

MORRIS H. WALMER,
DR. J. C. HEIDE,
ADAM FISCHER, } Committee.

CORRESPONDENCE.

THE NEW YORK STATE DEPARTMENT OF HEALTH WANTS TUMOR SPECIMENS.

NEW YORK STATE DEPARTMENT OF HEALTH,
CANCER LABORATORY OF BUFFALO,
BUFFALO, N. Y., March 3, 1902.

Editors American Veterinary Review :

DEAR SIRS :—The staff of this Laboratory are very anxious to secure from all possible sources, live animals, especially the smaller and more manageable ones, with malignant tumors. For this purpose rats, dogs, rabbits and fowl are most desired. We realize that success in transplantation experiments is to be attained, at least at present, only among animals of the same species. I therefore beg you to insert in your valuable journal, a request for cases of this kind and would beg that animals presenting lesions of this character be sent to us in suitable form, directed to Dr. H. R. Gaylord at our Laboratory, 113 High St., Buffalo, N. Y. We will cheerfully pay the expense of transmission and will even be willing to pay for the animals when peculiarly interesting specimens may thus be obtained. It is necessary, however, for our work, that they reach us while still alive.

If you will kindly give this request a prominent place in your journal, I assure you you will do us a great favor, as well as a benefit to comparative pathology, in which we are all interested.

Thanking you for this favor, in advance, I am

Very respectfully yours,

ROSWELL PARK, *Director.*

COLLEGE COMMENCEMENTS.

KANSAS CITY VETERINARY COLLEGE.

The eleventh annual commencement exercises of this popular institution were held in the College Hall, 1404 Holmes Street, Kansas City, Mo., March 12, at 7.30 P. M., when the following gentlemen received diplomas : James B. Boazman, James M. Lawrence, James Mahon, E. Manford Nighbert, Henry R. McNally, Robert A. Phillips, Erni V. Robnett, Morey A. Sappington, Frank M. Starr, Orville A. Stingley, Fred W. Weston, and Zachary Veldhuis, D. V. S. (post-graduate). The faculty address was delivered by Hon. J. A. McLane, the diplomas were presented by Dr. R. C. Moore, the class response by Dr. James Mahon, while the exercises were interspersed by delightful instrumental and vocal solos by young ladies, an innovation which has become very popular with the college the past session. The hall was filled to overflowing with the friends of the students and college, and proved a very enjoyable and interesting occasion.

On the 6th ult. the college gave its annual dinner to the students, faculty and friends, the spread including about 140 plates. The *menu* was very pleasantly and acceptably served, Dr. R. C. Moore acting as toastmaster, and the following toasts were responded to : "Ethics," Hon. J. A. McLane; "Three Years," Fred W. Weston; "The Middle of the Way," Lloyd Champlain; "Freshmen," Chas. E. Wiggins; "K. C. V. C. Alumni," Dr. B. F. Kaupp; "The Pathogenic Germ," Dr. I. J. Wolf; "The Bureau of Animal Industry," Dr. A. G. G. Richardson; "The Veterinary Profession from a Layman's Point of View," Hon. Alfred Weston; "The K. C. V. C.," Dr. S. Stewart.

DR. GEDDES, representative of the United States Department of Agriculture, resident in England, tested during the past year 249 Herefords with tuberculin prior to export. Of this large number only seven reacted, and it is stated that of these seven he considered three only "suspicious cases."

DR. JOSEPH H. RAYMOND, Assistant Sanitary Superintendent, New York City, has invited the leading veterinarians of Brooklyn to meet at the Hoagland laboratory, April 3d, to discuss and coöperate in measures affecting the public health. We mentioned recently that Dr. Raymond was the first health officer in America to appoint a veterinarian upon his staff, and he should have the hearty support of the profession.

SOCIETY MEETINGS.

IOWA STATE VETERINARY MEDICAL ASSOCIATION. OFFICIAL REPORT OF THE PROCEEDINGS OF THE FOURTEENTH ANNUAL MEETING HELD AT DES MOINES, IOWA, FEB. II AND 12, 1902.

FEBRUARY 11TH—FIRST DAY—MORNING SESSION.

The meeting was called to order at 9.45 A. M., in Parlor I, Savery Hotel, by the President, Dr. P. O. Koto, of Forest City.

The Secretary announced that a system of card registration had been substituted for roll-call.

The Secretary read the minutes of the thirteenth annual meeting, which were approved as read.

The President delivered his address, which was replete with interesting and instructive thoughts.

The Secretary read his report as follows:

SECRETARY'S REPORT.

"*Mr. President and Members* :—It is by reason of the removal of Dr. John E. Brown from Iowa and his consequent resiguation from the office of secretary of this association that I now make the report of the secretary. The impaired health of Mrs. Brown necessitated the removal of Dr. Brown and family to a more equable climate. Chattanooga, Tennessee, was chosen as the most eligible place of residence, and it is in that city that the family now have their home. I have not the slightest doubt that I give expression to the feeling of all of you when I say that I greatly regret that it has been necessary for Dr. Brown to remove from Iowa and to sever his connection with this association as an active member and as its secretary. For eight years he served as secretary and treasurer of the Iowa State Veterinary Medical Association. During all of this time his services have been so generously and unselfishly devoted to the interests of the organization that he has won a warm place in the hearts of all its members and has always merited and received their praise. The present standing of this organization is due in a large measure to Dr. Brown's well directed efforts. It is no easy task to take up and continue satisfactorily a work that has so prospered in the hands of the one who relinquishes it. It was, therefore, with reluctance that I assumed the duties of secretary, *pro tempore*, last October at the request of the President, Dr. P. O. Koto.

"Owing to the fact that Dr. Brown had a considerable part of the books and papers of the association packed with his goods, and that this goods was delayed in shipment to Chattanooga, the part of the material of the association which was useful in carrying forward the work of the secretary, did not reach me until Dec. 9th last, and, as a consequence, the work of getting up the program and arranging for the meeting was delayed. For that reason the meeting is held later this year than is customary.

"On November 9th I sent out to each member a circular letter asking for contributions to the program of this meeting. As this was done in advance of receiviuig the list of members, and as I had to depend upon my memory of who were and who were not inmembers, in mailing the letter, twenty-six mem bers were missed. These members were reached by a subsequent communication after the list of members came into my hands.

"After receiving the books containing the accounts with the inmembers, I sent to each member a statement of his account. This was done December 14th. In order to make more effective the attempt at collection, I had a new form printed. The upper half of this form has printed upon it the directions to the members concerning the remittance and the article of the by-laws which covers the matter of membership fees and dues. The lower half contains the blank form for statement of account. These two halves are separated by perforations, so that the lower half may be torn off and sent with the remittance to be receipted by the treasurer, returned to the member, and held by him as his receipt. I believe all of the members have been given an opportunity to see this form.

"On January 1st I found that the responses to my request for papers had not been liberal enough to insure a well filled program, so at that time I sent out to a number of members whom I thought would give their help, a personal request for a paper or report of a case. From this appeal I got enough favorable replies to make the program what you see it to-day.

"I would observe at this point that the majority of the members are not ready enough to supply a paper or report to the program. This keeps the secretary in a constant state of anxiety lest the time for the meeting arrive without an adequate program. You are all aware that the meeting would be an absolute failure but for the papers and reports submitted. In fact, without these it would hardly be necessary to have a meeting at all. It could in any event be only a business meeting. It is

equally well known that the secretary, without the coöperation of the members, is a helpless and useless part of the machinery of the association. Why then should it be made for him such a difficult task to secure contributions to the program? Will you not wake up to a proper realization of the urgency and importance of replying to these requests of your secretary and even before this meeting comes to an end may the secretary not have promise of a paper or report of a case from a goodly number of you? You can decide in the period which intervenes between now and the next meeting what subject you will write upon.

"On looking up the records it was found that 12 veterinarians still residing in the State were once members but have been suspended for non-payment of dues. A letter with which was enclosed statement of dues owing at time of suspension, was sent to each of these asking him to pay his arrears and apply for reinstatement. A few replies were received, which will be referred to at another time.

"To each of several members who have left the State but who are in arrears in their dues a letter was sent with enclosure of statement of arrears, requesting that these arrears be paid and that application be made for reinstatement to membership. The responses to these requests will be referred to at another time.

"On January, 7, 1902, as near as I was able to learn, there were in the State 57 graduated veterinarians who are not members of the Iowa State Veterinary Medical Association. A few of these had been members at one time but had resigned. To each of these was sent a circular letter urging him to make application for membership. Accompanying this was sent a blank application form. I thought best to get out a new form for this purpose. The old form was very unhandy and somewhat antiquated and the supply had been pretty well exhausted. In this new form the printing is all on one page and the slip is of such size that it can easily be filed without folding. The entire substance will, in this way, be in such form that it can be taken in at a glance. It is divided into four sections. First, there is set forth the article of the constitution governing the matter of membership together with some instructions. Second, there is a blank application form. Third, there is a blank for report of board of censors. Fourth, there is a blank form for report of the secretary on the result of the ballot of the association upon the candidate. To this date 8 applications for membership have been received by the secretary. This number will, I hope, be greatly increased during this meeting. I

would observe here that it is rather surprising that more veterinarians are not awake to the great advantages of membership in our State organization. A member not only has the consciousness that he is strengthening himself by uniting with others in this way, but, also, the consciousness that he and his associates are elevating the profession of veterinary medicine, and bringing it to the attention of the laity, and in this way commanding their commendation of our noble pursuit. A veterinarian cannot do better for himself or for his profession than to carry an honorable membership in a State veterinary organization. It is to be hoped that all the members will unite in an effort to bring every eligible veterinarian in the State within the bounds of our association.

"On January 17th the program and the announcement for this meeting were mailed to each veterinarian in the State whether a member or not, and to each honorary member. Also, a copy of each was sent to each of several prominent newspapers and agricultural journals with the request that they be used as subject matter for the news columns. This request was complied with in every case that I was able to trace.

"In addition to this a general correspondence has been kept up with various members and others when occasion required. I would like to say here that the secretary would be pleased to have a letter from each member and veterinarian not a member at least once a year. I regret to say that this pleasure has not been had during my incumbency to date.

"I would call your attention to the following statement:

" Veterinarians in Iowa,	155
" Resigned from membership in the I.S.V.M.A.,	7
(In State 3, out of State 4 (?).)	
" Suspended from membership,	39
(In State 17, out of State 22.)	
" Honorary members,	10
(In State 1, out of State 9.)	
" Active members,	98
(In State 76, out of State 22.)	
" Active members in good standing,	62
(a) With dues paid up to and including 1902	27
(b) With " " " " " 1901	21
(c) With dues paid up to and including 1900	14
" Members not in good standing,	36
(a) Only three years in arrears	7
(b) " four " " "	2

(c) Only five years in arrears	4
(d) " six " " "	6
(e) " seven " " "	7
(f) " eight " " "	10

" As the sum required for yearly dues is only one dollar, it is no small wonder that so many would allow themselves to fall into delinquency. I am glad to say, however, that my attempts at collection have been quite successful thus far. It is probable that if statements were regularly sent, the members would have their attention directed to the fact that they really owe the association something and that they would be more prompt in payment. This plan should be given a thorough test.

" I would refer briefly to Article IV of the By-Laws as amended at the 1897 meeting, which reads as follows: Each member, on being admitted to membership, shall pay the sum of two dollars, and shall annually thereafter pay one dollar in advance to the Association. And any member in arrears more than two years shall be suspended until said arrears are paid.

" It seems to me that the words ' shall be suspended ' in themselves work a suspension when a member has fallen into arrears more than two years; or, at least, these words make suspension compulsory on the part of the association. If a member were suspended when he comes into arrears as much as three years, and it were generally known that he would be so suspended, I doubt if many would allow themselves to become delinquent to such an extent. At all events, if the member were promptly suspended at that time, his dues would not accrue any further and he would never be called upon to pay more than three dollars back dues in order to secure reinstatement. Under such conditions he would be much more likely to pay up arrears and ask for reinstatement than if his dues were allowed to accrue for five or six years or longer. This is a matter upon which the association should take some action at this meeting.

" Following is a statement of the finances covering the period of my incumbency from October 1, 1901, to February 10, 1902:

Receipts.

" Cash from J. E. Brown	\$66.57
" Refund Am. Exp. Co.	1.35
" Cash for dues for 1902	26.00
" " " back dues	35.75
" Membership fees	12.00
	<hr/> \$141.67

Disbursements.

" Express	\$ 2.00
" Stationery	17.90
" Blanks	3.50
" Stamps	15.50
" Telegrams	.90
" Announcements	1.50
" Programs	3.00
" Badges and express	14.20
" Secretary's expense	14.62
" Cards	2.25
	<hr/>
" Balance handed to the Treasurer	\$66.30

"I desire to return my thanks to all those who have so willingly assisted the secretary in his work during the preparation for this meeting. Respectfully submitted,

"JOHN J. REPP, *Secretary pro tempore.*"

The Treasurer submitted the following report:

TREASURER'S REPORT.

Fourteenth Annual Meeting, Feb. 11, 1902.

I.

FOR JOHN E. BROWN.

Receipts.

" Cash on hand from 12th Annual Meeting	\$78.80
" Cash for dues for 13th Annual Meeting	38.50
" Cash for membership fees	8.00
	<hr/>

\$125.30

Disbursements.

" Presentation of canes	\$33.55
" Hall rent, 13th Annual Meeting	5.00
" Secretary's expense	10.38
" Postage	1.00
" Stationery	1.25
" Paper	.35
" Stenography	1.25
" Express Oskaloosa to Ames	1.10
" Express Waynesville to Ames	1.35
" Letter heads	3.50
	<hr/>
" Balance to John J. Repp	\$66.57

II.

FOR SELF.

Receipts.

" Cash from John E. Brown	\$66.57
" Refund American Express Co.	1.35
" Cash for dues for 14th Annual Meeting	26.00
" Cash for back dues	35.75
" Cash for membership fees	12.00
	———— \$141.67

Disbursements.

" Express	\$ 2.00
" Stationery	17.90
" Blanks	3.50
" Stamps	15.50
" Telegrams	.90
" Announcements	1.50
" Programs	3.00
" Badges and express	14.20
" Secretary's expense	14.62
" Cards	2.25
	———— \$75.37

" Balance in Treasurer's hands \$66.30

" Respectfully submitted,

" JOHN J. REPP, *Treasurer pro tempore.*"

The following committee was appointed to audit the Treasurer's accounts : Dr. H. L. Stewart, Dr. C. A. Clinton, Dr. Geo. M. Walrod.

The auditing committee made the following report :

REPORT OF AUDITING COMMITTEE.

" DES MOINES, IOWA, Feb. 11, 1902.

" We, the Auditing Committee for the Fourteenth Annual Meeting of the Iowa State Veterinary Medical Association, hereby certify that we have examined the above account of the Treasurer, and that we find it correct.

" GEO. M. WALROD,
" C. A. CLINTON, }
" H. L. STEWART. } *Auditing Committee.*"

By vote of the association, the report was accepted.

The Secretary read communications from various members, and others. Of especial interest was the following from Dr. John

E. Brown, of Chattanooga, Tenn., former Secretary of the association :

"CHATTANOOGA, TENN., Jan. 28, 1902.

"To My Dear Old Friends and Members of the Iowa State Veterinary Medical Association :

"GENTLEMEN:—The announcement and most excellent program of the next annual meeting of the association to be held on Feb. 11th and 12th is before me.

"I can scarcely bring myself to realize that my position, geographically, is so remote from you that henceforth I must be deprived of the exceeding pleasure of attending these meetings. That I can no longer be, in person, one of you with whom it was my privilege to mingle so pleasantly and so profitably for so many years, is to me a matter of very deep regret.

"Side by side we have worked together for the advancement of the various interests of our profession without a hitch, and I cherish the thought that after all these years I can think of each and every member as a warm personal friend as well as co-operator in association matters. While it is true, I am temporarily, through force of circumstances, out of practice, I am still in the true sense of the term a veterinarian, and your interests are mine. I hope to live to see the day when the veterinary profession will be honored and appreciated just as much as any other, and will then rejoice as heartily as any one. Simply treating the sick and injured horses, cattle and other animals is not the highest calling of the profession. That far it is looked upon more as a trade with a financial basis of valuation. Just as soon as the people learn that veterinarians stand for higher sanitary conditions—conditions which mean better health and more happiness to the human race as well as to the lower animals—and the veterinary profession proves that its members are true, educated, scientific sanitarians, then, but not until then, will the profession enjoy the high respect, confidence and power socially and professionally, that every progressive veterinarian knows it should. Iowa in the years past has made a beautiful start in the right direction in this respect. She has set a noteworthy pace for her sister States to follow. I do not fear that in the years to come she will fall behind the pace she has already set.

"The North and West are far better suited to veterinary practice than the South. The ratio of opportunities for veterinarians in the North and the South is about ten to one in favor of the former. The stock interests here are undeveloped. As

a rule the stock seen through the country is very inferior both in quantity and in quality as compared with the Northern and Western States. There is a gradual improvement in the stock interests throughout the South, and sooner or later a fertile field for veterinarians will open.

"We as a family are greatly enjoying the modified winter temperatures, and are passing the winter with decidedly improved health. While we do, and long will, miss the familiar faces and cheery 'hellos' of our Iowa friends, these changes go a long way toward making us like our new home 'way down in Dixie.'

"And now, my friends, while it becomes my unpleasant duty to present my resignation as Secretary and active worker in the Iowa State Veterinary Medical Association, in spirit I will still be with you, especially on Feb. 11th and 12th. I shall cherish the kindest remembrances of the association and will ever rejoice in any and all of its achievements.

"In a parting word I would, if I could, inspire each Iowa veterinarian with a still greater interest in the State association and loyalty to its interests. Combine your efforts, concentrate your forces, permit naught but harmony in your ranks, and your progress will mean success. Also, let me bespeak for my successor in office the same loyal, courteous treatment you have always accorded to me.

"Long may you prosper. Remember my latchstring is out to any member who may ever happen to journey this way.

"Ever yours, with best wishes, J. E. BROWN."

Dr. Gibson moved that a special committee of three be appointed by the President to draft resolutions in regard to Dr. John E. Brown, former secretary of the association. This motion prevailed.

The President appointed the following committee: Dr. J. I. Gibson, Dr. John J. Repp, Dr. Geo. A. Scott.

The Board of Censors reported favorably upon the following applicants for membership: Dr. G. L. Buffington, Baxter; Dr. N. A. Kippen, Riceville; Dr. F. F. Parker, Oskaloosa; Dr. J. S. Potter, Iowa City; Dr. John V. Jewell, Le Mars.

The President appointed as tellers Dr. S. H. Kingery and Dr. C. E. Stewart.

On ballot by the association the following were elected to active membership: Dr. G. L. Buffington, Dr. N. A. Kippen, Dr. F. F. Parker, Dr. J. S. Potter.

On motion the ballot on the application of Dr. John V. Jewell was postponed indefinitely because no one was present who knew Dr. Jewell well enough to inform the members fully in regard to him. Adjournment was taken to 1:30 P. M.

FEBRUARY 11—FIRST DAY—AFTERNOON SESSION.

Meeting called to order by President Koto at 1:30 P. M. New business was taken up.

The Secretary moved that all members three years or more in arrears in dues be suspended until all back dues are paid. Seconded by Dr. Kingery. The Secretary then explained that this motion was in accordance with the provision of Article IV of the by-laws of the association.

Dr. Walrod moved to amend the motion so as to exclude from suspension all those who would pay their dues before adjournment of the meeting for the afternoon. This amendment was duly seconded, put to a vote, and carried.

On vote the motion as amended was adopted. The Secretary then read a list of thirty-six members to whom this action would apply.

Dr. Clinton moved to instruct the Secretary to send a registered communication to each member suspended notifying him of his suspension and stating that all back dues must be paid before he could be reinstated. This was seconded, put to a vote and adopted.

On motion Dr. John E. Brown, Chattanooga, Tennessee, and Dr. H. E. Titus, Lafayette, Ind., both active members with dues paid up, were elected to honorary membership for the period during which they reside outside of the State.

Dr. Kingery moved that suspended members who desire reinstatement must, after paying back dues, apply for reinstatement and that the application must be submitted to a vote of the association by ballot; seconded by Dr. Clinton, put to a vote, and carried.

In the absence of the author the Secretary read Dr. Hamilton's report of "A Case of Anthrax in a Horse."*

As Dr. Simpson was not present his report on "Chronic Atrophic Orchitis in a Bull"** was read by Dr. Kingery.

The Board of Censors reported favorably upon the following applications for membership: Dr. A. B. Wilmoth, Des Moines; Dr. A. A. Adamson, Newton; Dr. T. F. McEvers, Colfax.

* Published in the department of "Reports of Cases" in this number.

The President appointed as tellers Dr. C. E. Stewart and Dr. P. Malcolm.

On ballot of the association the following were elected to active membership : Dr. A. B. Wilmoth, Dr. A. A. Adamson and Dr. T. F. McEvers.

The Secretary moved to reinstate Dr. W. A. McClanahan, who had been suspended for non-payment of dues, to active membership.

On ballot of the association Dr. McClanahan was reinstated.

On motion, the association went into secret session.

Dr. Repp moved that the non-graduate practitioners be given no more recognition than any other visitors. Seconded.

After some discussion, Dr. Austin moved to amend so as to extend an invitation to all except registered non-graduates to attend the meetings. This was fully debated and on vote was defeated. The original motion was then voted upon and carried. At 6:30, on motion, adjournment was taken to 8 P. M.

FEBRUARY 11—FIRST DAY—EVENING SESSION.

Called to order by President Koto at 8:30 P. M.

The President appointed Dr. J. I. Gibson and Dr. Geo. A. Scott to fill vacancies on Committee on Resolutions, due to the absence of Dr. G. E. Noble and Dr. Wm. Hamilton.

The report of the Committee on Sanitation was then made by the Chairman, Dr. T. A. Shipley.

REPORT OF COMMITTEE ON SANITATION.

“ By way of introduction, or explanation, of this report its chairman wishes to state that no effort has been made to advance any new or original ideas on this subject, but that the committee has gathered from contemporary veterinary literature and personal observation a few of what seemed to be the most pertinent facts and theories as applied to present local conditions.

“ The work has all been done in the last three weeks. It was arranged, at the suggestion of your worthy Secretary, to give Dr. Miller the ground covering State and municipal meat inspection. His plan of work was to send out about twenty letters to each of the cities and to some of the more important towns of our State with the following questions :

“ 1. How many slaughtering establishments have you, not including those having federal government inspection ?

“ 2. How many are within the city limits ?

"3. Give approximate number of animals slaughtered annually.

"4. Are all of these animals inspected before and at the time of slaughter by a city official?

"5. What are the qualifications of the inspector?

"6. What disposition is made of the condemned parts and carcasses?

"He states that only a few replies have been received and that they were very slow in coming in—the usual fate of such inquiries so far as I am able to determine. In fact there is no means whereby any statistics of this nature can be gathered. His report is inserted verbatim in the body of this report. To Dr. Gillian was assigned the task of reporting on State and municipal milk inspection. His report was placed in my hands yesterday, Feb. 10, and will be read as given. Your chairman then had left for his consideration the State control of contagious diseases and the laws regulating this work. A word in passing may be devoted to a consideration of the relations these sustain, or should sustain, to those of our sister States and those of the federal government. We have no instantaneous, sure-shot, cut-and-dried remedy to recommend for the cure of all the ills that ignorance and contempt of sanitary law engender. We are also willing to concede in the broad field of sanitary science the relative importance of the work of the regular physician, the sanitary engineer, the bacteriologist, the chemist, and all others engaged in any branch of the complicated work of the modern sanitarian, even to our friend, the original surgeon, the barber, in his legal attempts to assure us that he is shaving us with a clean razor. Certain it is that the keystone of progress in modern medicine is prevention rather than cure. We believe that all sanitary work should be concentrated into national, State and local boards of health which work together harmoniously and that this work should be directed by these boards. Also, that any State or municipal sanitary laws, rules or regulations should as far as possible supplement or augment the federal system already established and should not entail any unnecessary hardships or inconveniences upon those directly concerned.

"It is almost self-evident that no State with our modern methods of commercial activity and free exchange of all commodities, can of itself protect all its interests from invasion from without and from enemies within without the help of the general government. And, indeed, after conceding all that the general government has done, or is willing and able to do, there

will still be enough left to keep all trained sanitarians busy at work for the remainder of our natural lives at least.

"Municipal Meat Inspection."—To ascertain what is being done in municipal meat inspection your committee sent out a letter of inquiry to the board of health of each city and some of the more important towns of our State. Only five or six replies have been received. These are, however, from places that may be considered a fair average of the whole, as they are among the representative cities of the State.

"All have slaughtering-houses varying in number from two to five; some of which are situated within the city limits. We have not been able to ascertain the number of animals slaughtered annually, but it is safe to state that the aggregate number would amount to many thousands, yet the answers received would indicate that none of these animals are inspected either before or at the time of slaughter. That there are some diseased animals among all of these and parts of carcasses that should be condemned, there is no doubt, but nobody has any knowledge of what disposition is made of them, or to what use they are put. We can imagine, however!"

"One reply indicated that the subject had been discussed, but that no action had been taken.

"The great majority of our people are not aware of the necessity of this inspection. The danger of a contaminated meat supply is best known to veterinarians and it is incumbent upon us to make known this danger to others, and do all we can to bring about an adequate system of inspection. To this end your committee believes that veterinarians should be made members of boards of health whenever practical, and we would recommend that articles be published from time to time in our newspapers bearing upon the different phases of this subject; that each municipal council should pass an ordinance bringing each slaughter-house in the vicinity under municipal control, requiring them to do all their slaughtering at one abattoir, and that at a time when the council can best provide a qualified inspector, chosen by them, and to whom he must render a regular report.

"Dairy and Milk Inspection."—It has been requested by the chairman of the Sanitation Committee that I prepare a report on 'Dairy and Milk Inspection' and setting forth what it should be. The inspection of the dairies and milk in my part of the State has received no attention at all in regard to sanitary conditions, and the dairymen conduct their dairy business in a

way that is satisfactory to themselves, taking no thought of the consumers of the milk.

"The dairy and its product should receive our best attention, as there is no one article of food in such universal use as is milk; possessing as it does all the elements necessary for primary growth, it is the initial and only food for the newly born and continues as such for months. Milk will receive and convey the odor of its surroundings. The unpleasant flavor of certain vegetables, and sour or fermented foods which the cow may eat is readily detected in milk, and of all food that reaches our table none affords a more genial habitation for nearly every form of bacterium than milk. Not a year passes but that we find living proof of communicability of disease of various kinds through the medium of milk.

"Milk is part of the cow and is therefore animal matter. If the cow is tuberculous her milk is part of a diseased cow, and no matter how much it is boiled, it still remains part of a diseased cow and should not be used for human food. Now, while we are trying to protect the public against the use of this diseased milk, we should also protect the dairyman, and warn him against buying well-bred cows to increase the richness of his milk, simply because he can buy them cheap, lest he introduce some disease with them into his herd. I doubt if any one who has not been actually engaged in the inspection of dairy stables can appreciate the condition in which cows are sometimes found. Inflammation of the udder is a very common affection and in this case the secretions from the diseased organ pass away with the milk. In some cases there is tuberculosis of the organ, when, of course, the condition is even more serious. We may readily see that one or two diseased cows can contaminate the milk of a whole herd and render it unfit for use. There are many cases on record in which there is undeniable proof of the spread of typhoid fever, diphtheria and many other forms of disease through the medium of milk.

"The dairy industry is getting to be a very common one in our country, especially in larger cities, and we find only a small portion of the dairies under sanitary inspection. In this field I believe we can do a great work for humanity. We should impress upon the dairyman the criminality of selling milk from diseased cows, and induce him to apply sanitary principles to his dairy, such as thorough cleanliness, light, good ventilation, pure water supply, and good, wholesome food.

"We should be in touch with our health officers in our

locality, working together in one common cause to maintain the health of the community. It is along this line of work that the veterinarian can make for himself a reputation worthy of his calling. The only way these things can be accomplished is by legislation.

"It now remains with this association to use every means in its power to see that some proper law is passed by our legislature requiring that all dairies should be under strict inspection.

"State Control of Contagious Diseases.—Regarding contagious animal diseases our State this year seems to be remarkably fortunate so far as I am able to discover. The one disease that overshadows all others in its peculiarly slow, insidious and almost imperceptible, but none the less fatal progress, marches on almost unhindered and I might say by the large majority yet unknown. Tuberculosis seems still to elude all sanitary attempts of states and nations to satisfactorily control its ravages among human beings or their animal servants. Our State up to within a few years has been comparatively free from its grasp on our domestic animals, but we are fast becoming, as it were, a dumping ground of high bred infected stock from other States used in our higher bred herds for the supposed purpose of improvement. From these it is carried to all classes of stock and to all localities into which they may happen to be taken. Perhaps the warning recently given by the Secretary of Agriculture against the importation of high-bred stock, together with the tuberculin test imposed on all imported stock under his direction will do much to educate those concerned as to the nature and prevalence of the disease.

"The stock owner should remember that, even though there is at present some reason to believe, or rather to hope, that the principal source of infection for human beings is other human beings and for animals is other animals, an ounce of prevention in either case is worth many pounds of cure. The modern history of our knowledge of this disease is largely a recital of the achievements of Prof. Koch and his influence on the work of other modern investigators, and may be divided into three chief epochs. The first dating from his modest announcement in 1882 that he had traced tuberculosis to the presence of a bacterial parasite. Seldom, if ever, had any medical discovery been received immediately with such intense interest and yet the ground at that time was thoroughly broken for the reception of this seed, which immediately took root and thrived like the

proverbial green bay tree. This discovery gave a wonderful impetus to the work of modern pathology.

"The second epoch dates from the somewhat more sensational announcement of the secular press in 1890 of his discovery of a cure for this disease in tuberculin. Prof. Koch was then in the employ of his government at a salary of \$7000 per annum besides a pension, had one of the finest laboratories for bacteriological research in the world and was assisted by a well trained and well paid corps of assistants. Though tuberculin did not fulfil its promise as a curative agent it has paid its cost many times over as a diagnostic agent.

"The third epoch was ushered in last summer at the British Congress on Tuberculosis by the widely heralded announcement by this same Prof. Koch that human tuberculosis cannot be transmitted to cattle and very strongly intimating the reverse conclusion that animal tuberculosis is very seldom if ever transmitted to the human being. This latter part especially has raised a storm of protest among investigators the world over, and even though the specific contention may be proved beyond a doubt untrue, it will have accomplished a grand result by spurring on its final settlement.

"In reviewing the legislation by the different States and Territories on this subject as compiled by the Department of Agriculture in bulletin No. 28, we find forty-nine different laws or absences of law enumerated regulating, or intended to regulate, this malady in the different States and Territories.

"The laws of our own State make no specific reference to tuberculosis. The only mention is in rule 12 of the rules and regulations of the State Board of Health, which reads, 'In suspected cases of bovine tuberculosis the tuberculin test shall be recognized as a valuable diagnostic.' This is excellent as far as it goes, but whether this declaration is all the law in the case will warrant or the expediency of circumstances permit, we are without the necessary data to judge. The State Veterinarian by virtue of his office as a member of the State Board of Health is looked upon as the State veterinary sanitarian, and if the law as it now exists is too vague and indefinite to allow of anything more explicit, we should have the hearty and concerted support of every graduated veterinarian and his friends in this State to bring about the passage of a law or the adoption of rules and regulations that his experience will have shown to be practical.

"The next most insidious disease which the sanitarian of this State has to deal with is, perhaps, glanders. We believe

this disease to be more generally understood and feared by the community at large than is tuberculosis.

" Anthrax, so far as I have been able to determine, has not gained any permanent foothold in our State as it has in certain States farther south on the Mississippi. There is, however, always a possibility of its invading our territory.

" Sporadic outbreaks of rabies and other infectious diseases have been discovered within our borders and were promptly and efficiently handled by the State Veterinarian and his assistants.

" Hog cholera and swine plague, for some reason or other, seem to have spent their fury, and the hog has seemed to enjoy extraordinarily good health the past season. How much this may be due to an enforced economy of feeding on account of high prices of grain I shall leave to you and the producer to conjecture. Certain it seems that a large part of the annual loss from this source could be obviated by intelligent sanitary measures. It will certainly not be contended that this improvement has been brought about by the strict enforcement of the law against buying, selling or giving away the carcasses of hogs dead from this disease, or against the transportation of infected hogs over the public highways.

" It would be highly interesting and instructive to know how much the prevalence of this disease has been lessened by the general early sale of all suspicious hogs for immediate slaughter and the consequent removal of these centres of infection with as little delay as possible, although this is in direct opposition to the intention of the law. This law, however, has been of inestimable value in fixing a large per cent. of the loss on the original owner of this stock by his willingness to refund money paid for diseased stock rather than stand for prosecution under the statute. In passing I might remark that I do not know of a better or more economical plan of rendering innocuous any carcass or part of a carcass affected with any known contagious disease than by the method of tanking now employed around any large slaughter-house, and this one point alone would render the consolidation of the little country slaughter-houses into one well-equipped house desirable if for no other reason. In this way the different centres of infection operating through the feeding of offal in a raw state to other stock would be eradicated.

" As to the transportation of stock intended for breeding or feeding over our railroads, we believe that this can be done only in freshly disinfected cars. The stock should be loaded at tem-

porary movable chutes that have likewise been recently disinfected. The same precautions should be observed in unloading.

"Regarding sheep scab, I wonder how many of our members know of the provision of our code for the handling of this malady and whether it has ever been enforced, and, if so, why it cannot be made to come under the jurisdiction of the State Veterinarian.

"Finally, regarding legislation to right some of these matters, your chairman recommends the concentration of our energies through our Committee on Legislation, with the object of procuring legislation that will ultimately result in compulsory State meat inspection under the supervision of the State Veterinarian, or the State Board of Health with the State Veterinarian as its executive officer. At present the law should not be mandatory, but should simply enable cities, towns, or townships to regulate their local affairs through their local boards, subject to certain restrictions of the State board. There ought also to be some scheme devised whereby vital animal statistics and statistics of country slaughter-houses not under inspection could be obtained and classified under this same authority. In a word, publicity and a general enlightenment of ourselves and the public is the key to the adjustment of these problems. The municipal slaughter-house combined with a system of insurance of clinically sound animals under the supervision of well trained, honest, courteous, discreet inspectors will solve the problem and lead to the establishment of a system for the detection and prevention of most of our contagious diseases.

"As we said before, there is nothing new or original in this report. We have in our small way gathered a few ideas from the various sources at our command which may be termed sprigs of promise that, with a little mixture of technical ability and common sense, may be engrafted upon the branches of the hardy old tree of existing conditions without any fear of injuring its vitality and with some hope of improving the quantity and quality of its fruit and the beauty of its foliage.

"Respectfully submitted,

"T. A. SHIPLEY
"J. MILLER
"H. M. GILLIAN } Committee."

On motion the report was received.

Dr. S. H. Kingery then presented an extemporaneous report on "Ravages of *Strongylus Tetracanthus*."

The report of Dr. E. G. Marten on "Urethral Calculus" * was, in his absence, read by the Secretary.

The report of Dr. G. P. Statter on "A Cow Case" * was, in his absence, read by the Secretary.

In the absence of Dr. J. Thomsen his report on "Open Joint" * was read by Dr. Scott.

Dr. C. C. Lyford, of Minneapolis, Minn., was introduced and spoke on the subject of the meeting of the American Veterinary Medical Association, which takes place at Minneapolis in September next. He gave all graduated veterinarians a cordial invitation to attend the meeting, assist it by their presence and receive its benefits. He said that arrangements had been made to entertain the members and visitors and their ladies, and that the ladies would be admitted to the banquet.

Dr. S. D. Brimhall, also of Minneapolis, Minn., was introduced, and after extending an invitation to the graduated veterinarians of Iowa to attend the sessions and social functions of the meeting of the American Veterinary Medical Association next September, he gave a short talk on the veterinary sanitary laws of Minnesota. As Dr. Brimhall is veterinary officer of the State Board of Health of Minnesota and is charged with the administration of the State veterinary laws, this talk from him was very much appreciated.

Dr. Kingery moved that a committee of three be appointed by the President for the purpose of furthering the interests of the meeting of the American Veterinary Medical Association to be held at Minneapolis next September. Seconded, put to a vote and carried.

The President appointed the following committee: Dr. J. I. Gibson, Dr. John J. Repp, Dr. W. A. Heck.

In the absence of Dr. L. U. Shipley, his report on "Typhoid Fever in a Horse" ** was read by Dr. Gibson.

In the absence of Dr. Wm. Drinkwater, his paper, "Parturition Cases," † was read by the Secretary.

On vote of the association, Dr. C. C. Lyford and Dr. S. D. Brimhall were elected to honorary membership in the association.

Dr. H. E. Talbot, committee on clinics, announced the operations for which he had arranged, and urged a full attendance.

Dr. C. E. Stewart moved to adjourn until 8 o'clock the fol-

* Will be published in the May REVIEW.

† Will be published in an early number of the REVIEW.

lowing morning, to meet at Dr. Talbot's infirmary. Seconded, put to vote and carried.

FEBRUARY 12TH—SECOND DAY—FORENOON.

This forenoon was devoted to a clinic held at Dr. Talbot's infirmary.

The operations were as follows : Castration of double cryptorchid, by Dr. C. E. Stewart ; castration of single cryptorchid, by Dr. P. Malcolm ; median neurectomy for ringbone, by Dr. D. H. Miller and Dr. P. Malcolm ; removal of tumor from sow's udder, by Dr. W. A. Heck ; arytenoideectomy for roaring, by Dr. J. H. McNeall ; peroneal tenotomy for stringhalt, by Dr. W. A. Heck and Dr. H. E. Talbot.

Dr. Talbot had charge of the clinic, and the arrangements were very satisfactory. The operations were well performed, and the clinic proved very interesting and instructive.

FEBRUARY 12TH—SECOND DAY—AFTERNOON SESSION.

Dr. E. Baughman presented his paper on " Rabies." *

Dr. George M. Walrod read his paper on " Amputation of a Bull's Penis." *

Dr. P. Malcolm presented his paper on " Abortion in Cows." *

Dr. H. L. Stewart read his paper on " Cæsarean Section." *

Dr. S. T. Miller then presented his paper on " External Ulcerative Ano-Vulvitis." * He said that the name had been suggested to him by Dr. Repp as a substitute for the name Infectious Ulcer of the Vulva, which had been applied to this disease but did not seem appropriate.

In the temporary absence of Dr. H. E. Talbot from the convention hall his paper on " The Trials of the Veterinary Board " * was read by the Secretary.

Dr. Gibson moved that the Secretary be authorized to edit the proceedings of this meeting and to have them printed in the AMERICAN VETERINARY REVIEW and the *Journal of Comparative Medicine and Veterinary Archives*, if the editors could be induced to publish them ; or to have them printed in pamphlet form if it could be done free of cost by means of advertisements ; the Secretary to use his discretion in making choice between the two methods of publication and to receive the sum of twenty dollars for his services in this connection. Seconded, voted upon, and carried.

* Will be published in an early number of the REVIEW.

The Secretary moved that the next meeting be held at Cedar Rapids. Seconded and after some discussion carried.

On motion it was decided to hold the next meeting between December 1, 1902, and March 1, 1903, the exact time to be decided upon by the President and Secretary.

The Committee on Resolutions then reported as follows:

RESOLUTIONS ADOPTED.

"Mr. President and Members: We, your Committee on Resolutions, beg leave to report as follows:

"Resolved, That it is the sense of this association that the State Legislature should at its present session be very generous in the matter of granting the appropriation asked for and so greatly needed for the use of the veterinary section of the Experiment Station at Ames so that comprehensive investigation may be made in reference to the nature, prevention and treatment of the many diseases of our domestic animals which are so imperfectly understood and which cause such extensive losses, with a view to the prevention of these losses. Also, that the most liberal spirit should control the legislature in granting the appropriations for the other branches of work in the Experiment Station and to the State College for support and buildings.

"Resolved, That we believe that it is requisite for the proper advancement of the Division of Veterinary Medicine of Iowa State College that its management be put into the hands of a veterinarian; therefore, we would respectfully request the Board of Trustees of that institution to place a veterinarian in the position of dean of that division of the college.

"Resolved, That this association give its hearty support and assistance in every way possible to the State Board of Veterinary Medical Examiners in order that the best results may accrue to our profession now and in future years.

"Resolved, That we consider the Bang method of suppression of tuberculosis of cattle to be the best method available and that we commend it to the cattle breeders of the State.

Resolved, That this association believes that there should be complete revision of the laws of our State relating to veterinary sanitation and the powers and duties of the State veterinarian and his assistants. Especially do we believe that all the laws in reference to sheep scab should be repealed and more effective laws enacted in their stead, putting the control of this disease into the hands of the State Veterinary Department and providing sufficient funds to carry on the work.

“Resolved, That it is the opinion of this association that Section 5012 of the code should be amended by striking out the following words, to-wit: ‘knowingly’ in the second and the third line and ‘knowing the same to be’ in the fifth line. And further, that Section 5013 should be amended by striking out the following words, to-wit: ‘knowingly’ in the first line, ‘nasal-gleet’ in the second line, ‘button’ in the third line, and ‘knowing the same to be’ in the sixth line. And further, that Section 5014 should be amended by striking out the following words to-wit: ‘nasal gleet’ and ‘button’ in the second line.

“Resolved, That it is the sense of this association that a competent veterinarian should be chosen by the Superintendent of the Horse Department of the State Fair to pass upon the soundness and freedom from hereditary unsoundness of all horses exhibited at our State Fair. Be it further

“Resolved, That a copy of this resolution be sent to the Secretary of the State Board of Agriculture and to the Superintendent of the Horse Department of the State Fair.

“Resolved, That expert judging of horses both as to soundness and individual excellence be made a feature of our next clinic. And be it further,

“Resolved, That the Committee of Clinic be hereby requested to arrange for the presence for the above purpose of at least two classes of draft horses and two classes of road or carriage horses.

“Resolved, That we express our strong appreciation of the earnest efforts of the late Dr. Rush Shippen Huidekoper in behalf of the veterinary profession in America as author, editor, teacher and practitioner, and especially his efforts in the interest of army legislation, that by his death we have lost one of our most powerful supporters and co-workers, and that we extend to Mrs. Huidekoper our tenderest sympathy for her in her great personal loss.

“Resolved, That we extend our thanks to the management of the Savery Hotel for placing at our disposal a convention hall free of charge, and to the newspapers of Des Moines for their courteous treatment.

“GEO. A. SCOTT
“J. I. GIBSON }
“F. J. NEIMAN } Committee.”

The report of the Committee on Resolutions was on motion unanimously adopted.

The election of officers resulted as follows:
President—Dr. J. I. Gibson, Denison.

First Vice-President—Dr. W. A. Heck, Maquoketa.

Second Vice-President—Dr. T. A. Shipley, Cedar Rapids.

Secretary and Treasurer—Dr. John J. Repp, Ames.

Board of Censors—Dr. S. K. Hazlet, Oelwein; Dr. Geo. A. Scott, Independence; Dr. W. H. Austin, Newton.

The appointment of committees was deferred.

Dr. W. A. Heck offered special resolutions as follows:

"Resolved, That inasmuch as the offering of unsound stallions to the public for breeding purposes is a menace to the best interests of the horse-breeders of the State, we recommend the enactment by the legislature at its present session of a law requiring the licensing of all stallions used for public service as sires.

"Resolved, That we extend to Dr. H. E. Talbot a vote of thanks for providing such an extensive clinic for our benefit, and that the usual appropriation be made to defray the expense in connection therewith."

On motion these resolutions were adopted.

The Committee on Resolution on Dr. John E. Brown, reported the following resolution:

Resolved, That we extend to Dr. John E. Brown, our former Secretary, our hearty good will, an expression of our high appreciation of his generous efforts through so many years in behalf of our association, and our best wishes for the health, happiness and success of himself and his family in their new southern home.

"J. I. GIBSON,

"GEO. A. SCOTT,

"JOHN J. REPP."

On motion it was unanimously adopted.

The Secretary moved that the President appoint a Committee on Legislation. Seconded, voted upon and carried.

The Committee on Disease and Treatment submitted a report as follows:

REPORT OF COMMITTEE ON DISEASE AND TREATMENT.

"My report on disease and treatment must be brief. The members of the association have been somewhat negligent in reporting for this committee. Abundant material could be offered if members would take notes on cases, observing the new phases of disease and its prevention and treatment.

"In this State the usual diseases have appeared. Tuberculosis is on the increase. It has been noticed, however, that the most intelligent, active and successful farmers are now begin-

ning to view tuberculin as a valuable aid to diagnosis. They take more kindly to the tuberculin test, and feel that it is the only method by which a check can be put upon the course of this scourge. Actinomycosis is prevalent. Treatment with potassium iodide in the early stages is most gratifying, and in the later stages excision of growths and bone if necessary is of much benefit, and cures a large majority of cases. Bichromate of potassium in 20 per cent. solution has proved valuable in swabbing out abscess cavities. Impaction of the third stomach and cornstalk disease are frequent, and the fatality great. The symptoms of these diseases appear to me very similar at times, and treatment must be entirely preventive. Glanders and farcy are met with occasionally. Malignant catarrh of the ox has been epizoötic throughout the northeastern portion of the State, but was of a rather mild type and readily amenable to ordinary remedies.

"In two herds of cattle in Floyd County afflicted with contagious abortion I applied treatment which consisted of the daily application of antiseptic washes to the external genitals, rump and quarters; thorough disinfection of the stable and discharges; careful removal of membranes when retained and irrigation of the uterus. In addition 4 drains of a three per cent. solution of carbolic acid was given subcutaneously once daily for the first week, then the dose gradually decreased until at the expiration of a month it was discontinued. The disinfection was kept up a month longer. At this time all signs of abortion had disappeared completely from the two herds.

"Dr. J. G. Parslow writes that in his territory during May and June epizoötic cellulitis prevailed extensively in severe form, but caused but little loss of life.

"Blackleg caused considerable anxiety in sections and is on the increase owing to lack of confidence in vaccination on the part of the farmers. Cornstalk disease has caused considerable loss. It appeared from two to four weeks after the cattle were turned into the fields. No remedy seems of any avail. Dr. P. O. Koto reports cornstalk disease in his part of the State. Dr. H. E. Talbot writes that cornstalk disease has been very prevalent and very fatal. He has also had about 200 cases of what is similar to foot-and-mouth disease. The disease has all the symptoms of contagious aphtha and is as much like what we have been taught to call foot-and-mouth disease as a twin-brother and may be called that for want of a better name.

"J. H. MCLEOD, *Chairman.*"

On motion the association went into secret session.

Dr. Heck moved that the Secretary be instructed to invite only graduated veterinarians to our next meeting. Seconded, voted upon and carried.

On motion the association adjourned.

The following members were in attendance at the meeting : G. Lames, Dysart ; C. A. Clinton, Havelock ; Geo. M. Walrod, Storm Lake ; C. E. Stewart, Chariton ; John J. Repp, Ames ; P. O. Koto, Forest City ; W. A. Heck, Maquoketa ; P. Malcolm, New Hampton ; A. B. Wilmoth, Des Moines ; A. A. Adamson, Newton ; W. H. Austin, Newton ; John H. McNeall, Ames ; S. H. Kingery, Creston ; D. E. Baughman, Fort Dodge ; M. Y. Schaffer, Des Moines ; S. H. Bauman, Birmingham ; F. J. Neiman, Marshalltown ; S. T. Miller, Shelby ; S. K. Hazlet, Oelwein ; D. H. Miller, Harlan ; H. C. Simpson, Denison ; H. E. Talbot, Des Moines ; H. L. Stewart, Lacona ; Joseph Biggs, Union ; T. A. Shipley, Cedar Rapids ; J. I. Gibson, Denison ; J. A. Campbell, Des Moines ; Geo. A. Scott, Independence ; J. R. Sanders, Corydon ; N. A. Kippen, Riceville ; J. S. Potter, Iowa City ; G. L. Buffington, Baxter ; C. W. Stevens, Knoxville.

The following visitors were in attendance : Hon. W. M. Greeley, Ames ; Drs. C. C. Lyford, Minneapolis ; S. D. Brimhall, Minneapolis ; Thos. D. Hulme, Commerce ; Carl W. Gay, Ames ; H. B. Treman, Sioux City ; W. L. Evers, Iowa Falls ; Messrs. C. E. Harlan, Des Moines ; W. J. Wallace, Des Moines ; C. G. Martin, Des Moines ; A. C. Lookingbill, Yale ; Ira W. Edwards, Redfield ; P. C. Price, Shell Rock ; F. A. Blake, Harper ; Zan Cotter, Chicago ; A. W. Russell, Meservey ; A. F. Baldwin, Ames ; Walter E. Miller, Ames ; Albert Stigers, Stuart ; J. C. Boyd, Kansas City ; R. H. Stevenson, Sigourney ; Wm. R. Simpson, Elliott ; H. M. Stevenson, Perry ; H. C. Dillman, Oakley ; J. E. Harley, Chicago ; J. N. Cozzens, Colo ; S. T. Bodell, Winthrop ; W. L. Turner, New Hampton.

Respectfully submitted,

JOHN J. REPP, *Secretary.*

MINNESOTA STATE VETERINARY MEDICAL ASSOCIATION.

The tenth semi-annual meeting was called to order by President Dr. J. N. Gould at the Merchants Hotel, St. Paul, at 2:00 P. M., Jan. 15th, 1902. The following members were present

and responded to roll-call : Drs. C. C. Lyford, M. H. Reynolds, S. D. Brimhall, R. Price, L. Hay, K. J. McKenzie, S. H. Ward, G. A. Dallamore, J. G. Annand, J. N. Gould, George McGillivray, J. W. Gould, B. A. Pomeroy, H. C. Lyons, J. S. Butler, H. C. Peters, M. J. Sexton, F. H. Farmer, E. T. Frank, C. T. Eckles, J. P. Foster, R. LaPointe, Jno. McKay, J. W. Cook, D. M. McDonald, J. M. Lambert, Oscar Rydell, F. A. Illstrup, J. J. Findley, Geo. Leech, and R. H. Jerner.

The Treasurer's report was read and accepted.

The following applicants were duly elected to membership : Dr. R. K. Jerner (O. V. C., '96), Chatfield, Minn. ; Dr. Edward L. Kalb (O. V. C., '93), Rochester, Minn. ; Dr. Geo. Leech (O. V. C., '91), Winona, Minn. ; Dr. J. J. Finlay (O. V. C., '88), Duluth, Minn.

Dr. D. M. McDonald reported for Committee on Colleges ; Dr. Hay read his report on recent veterinary literature pertaining to medicine, describing some interesting cases of poisoning by overdoses of sodium hypo-sulphite ; Dr. Hay recommended the administration of potassium iodide in 3 ii doses a short time prior to parturition as a prophylactic measure to prevent parturient paresis.

Dr. Price next read his report on "Bacteriology," which brought out a lively discussion on tetanus and anti-toxines.

Dr. Annand's report on "Surgery" came next, describing a new operation for the treatment of impervious urachus. Dr. Annand also discussed the treatment of indolent summer wounds, also the best method of overcoming spasmodic contortion of the os uteri.

Dr. Brimhall next reported for the Committee of Infectious Diseases, stating there had been 1235 cases examined for glanders during the past year ; 500 had been tested with mallein and 325 had been condemned and killed. There had been 9982 cattle tested for tuberculosis, of which 458 reacted and 315 had been killed. Hog cholera had not been prevalent. There had been 90 cases of actinomycosis reported, of which 20 were condemned as not fit for food purposes. Black-leg existed in four counties. Hæmorrhagic septicæmia had been reported from several counties.

Dr. Reynolds next reorted for the Committee on Legislation and Empirics. The doctor proposed a committee of three to take charge of the prosecution of quacks. On motion, a committee of three was appointed. The committee appointed was : Drs. S. H. Ward, M. H. Reynolds, and J. S. Butler.

The election of officers then took place, and resulted as follows:

President—Dr. C. C. Lyford, Minneapolis.

First Vice-President—Dr. E. T. Frank, Warren.

Second Vice-President—Dr. J. P. Foster, Selby, South Dakota.

Secretary and Treasurer—Dr. K. J. McKenzie, Northfield.

Trustees—Drs. J. W. Cook, H. C. Peters and M. H. Reynolds.

On motion, a committee of three was appointed to draw up resolutions expressing our sympathies and feelings towards Dr. Youngberg and also regarding the death of Dr. Huidekoper. The committee appointed was; Drs. Brimhall, Frank and Price.

The following were then presented and adopted:

Resolved, That we the members of the M. S. V. M. Association, learn with sincere gratification of the markedly improved condition and hope for a speedy recovery of our esteemed colleague, Dr. A. Youngberg, of Lake Park, Minn.

Resolved, That a copy of the above be spread upon our minutes, and that a copy of the same be sent to Dr. Youngberg by our Secretary.

(Signed) Dr. E. T. FRANK,
Dr. R. PRICE,
Dr. S. D. BRIMHALL.

WHEREAS, The M. S. V. M. Association learns with regret the decease of our most eminent and esteemed colleague, Dr. Rush Shippen Huidekoper, we feel that in his death the veterinary profession has lost a most brilliant and untiring worker. Therefore, be it

Resolved, That we hereby express our appreciation of his unselfish life work for his profession and our sorrow at his death.

(Signed) Dr. S. D. BRIMHALL,
Dr. E. T. FRANK,
Dr. R. PRICE.

Adjournment for supper was taken.

After supper the members met at the State Experimental Station, where several cases were exhibited that had been operated upon at previous meetings, among which were two cases of capped hock that had been operated upon two years previous; they had proved quite a success. Drs. Reynolds and Peters operated for the repulsion of a fourth molar, performing Williams' operation, removing the outer plate of the alveolus. Dr. Lyford exhibited several cases sent over from his infirmary in Minneapolis.

Thursday forenoon was spent at the Bacteriological Laboratory of the State University, where the members were entertained by Dr. Westbrook, the bacteriologist, and Dr. S. D. Brimhall. The members' visit to the Laboratory proved a profitable as well as an enjoyable forenoon.

Thursday afternoon the meeting was again called to order at the Merchants' Hotel, where the following paper was read, "Clinical Notes on Contagious Pneumonia," by Dr. S. H. Ward. The doctor reported 30 cases in one outbreak, of which number eight died. Autopsies were held and specimens sent to Dr. Westbrook, of the Bacteriological Laboratory, who confirmed the diagnosis. Dr. Ward's paper was quite lengthy and brought out a lively discussion.

Dr. Peters read his paper on "Verminous Aneurism of the Mesenteric Artery the Starting Point of a Fatal Septicæmia." This paper was original and proved Dr. Peters to be a student along the bacteriological line.

Dr. L. Hay next read his paper on "Eserine, its Uses and Abuses." This paper brought out a spirited discussion on the uses of eserine and on colics in general.

Dr. Lyford read a paper on "Bursal Enlargements," exhibiting photographs of cases before and after being operated upon. This was a paper that had been read before the A. V. M. A., and was presented before our association at the request of quite a number of the members interested in Dr. Lyford's radical surgery.

On motion, this association guaranteed a fund of \$500 to help entertain the A. V. M. Association, providing their next meeting was held in Minneapolis.

On motion, the President was empowered to appoint a committee of as many as he deemed necessary to help in entertaining the American Association.

On motion, a Press Committee was created consisting of three, to look after the press work of the society. The following constitute the committee as appointed : Drs. M. H. Reynolds, S. H. Ward and K. J. McKenzie.

At this juncture Dr. S. D. Brimhall read a communication from a clerk of the court, located in New York, regarding the qualifications of a Dr. Schmead, now lecturing with the Minnesota State Farmers' Institute.

On motion the following was added to our by-laws, Article X, Code of Ethics, as embodied in the by-laws of the A. M. V. A., embracing also that it shall be considered a breach of ethics for

any member of this association to reveal to any one not a member of this association particular or specific treatment practiced by a member of this association for the encouragement and help of each other.

At this juncture President Lyford appointed the following committees:

Colleges—Dr. H. C. Peters.

Infectious Diseases—Dr. J. G. Annand.

Bacteriology—Dr. S. D. Brimhall.

Surgery—Dr. L. Hay.

Medicines—Dr. R. Price.

Legislation—Dr. S. H. Ward, Dr. M. H. Reynolds, Dr. J. S. Butler.

Finances—Dr. W. Amos.

Resolutions—Dr. S. D. Brimhall, Dr. E. T. Frank, Dr. Richard Price.

Press Committee—Dr. M. H. Reynolds, Dr. S. H. Ward, Dr. K. J. McKenzie.

The next meeting of our State Association with the American Association was discussed quite freely, no formal action being taken, but the opinion was freely expressed that it would be desirable to hold a very short business meeting, probably on the Monday afternoon preceding the meeting of the A. V. M. A., adjourning the summer meeting from July 1 to September 1, accordingly.

Dr. Reynolds urged the members of the State Association to assist him in building up a veterinary museum that would be a credit to the State, urging particularly that material should be selected with a view of teaching value and not as mere curiosities, each donor to be given full credit on the descriptive label or placard. Dr. Reynolds also suggested the advisability of having the regular meetings reported and thought this could be arranged for without great expense.

The following resolution in regard to Dr. Schmead, veterinarian to the State Farmers Institute corps, was introduced by the Resolution Committee, previously instructed to do so:

WHEREAS, One known as Dr. Clarence B. Schmead is posing in the State as a qualified veterinarian, and is known as the State Farmers' Institute Veterinarian; and

WHEREAS, We learn from reliable sources that he is not a graduate of any regular recognized authorized veterinary college; therefore, be it

Resolved, That this association protest against his appearing

under the title of "Doctor of Veterinary Medicine" or any other title, or be recognized in any way which will carry the impression that he is a qualified veterinarian.

(Signed) S. D. BRIMHALL,
 E. T. FRANK,
 RICHARD PRICE.

The resolution was adopted, and the Secretary instructed to present the same to the Board of Control of the State Farmers' Institute and also to Superintendent Gregg, of Lynd, Minn.

Dr. Price presented in writing a motion to change the date of the annual meeting from the second Tuesday to the Thursday following the second Tuesday in January. The question arose as to the validity of this action, but it was decided to call for a vote upon Dr. Price's motion to change the date of the meeting. The motion being duly seconded was carried unanimously.

K. J. MCKENZIE, *Sec. and Treas.*

CALIFORNIA STATE VETERINARY MEDICAL ASSOCIATION.

The annual meeting was held in the parlors of the Grand Hotel, San Francisco, Dec. 11, 1901, and was called to order by President James Sullivan.

The following members responded to roll-call: Drs. Spencer, Sr., Sullivan, Megowan, Pierce, Jackson, Hogarty, Egan, Dalziel and Blemer. *Visitors.*—DeVoe, Prof. Ward, Fislier, Boomer, Keefer, Somers, McCarty, McLain, Creely, Urey, Inspector Lyman Wilson, and Supervisor G. H. Whitworth, of Merced County.

Unfinished Business.—The application of Dr. James Summerfield, of Santa Rosa, came up, and the question of his having a State certificate was waived. The Board of Examiners submitted a favorable report signed by Drs. Spencer, Pierce and Megowan; Dr. Summerfield was duly elected a member of the association.

The Report of Secretary and Treasurer was read and approved. A vote of thanks was tendered to Dr. Blemer.

Dr. Blemer read a paper on the importance of building up the association; spoke of the important sanitary work to be accomplished by the veterinarians of California, requested the assistance of the association, suggested the burial of past grievances, actual and imaginary, call every man's record clean, start him in anew, and help keep him in the straight and narrow path.

Dr. Pierce substantiated Dr. Blemer, acknowledging the rut into which the association had fallen, expressed the belief that this could and would be remedied, says Californians generally have a purpose in view, and it should be so with this association, and that purpose be to obtain and keep the membership of every veterinarian in the State.

Dr. Blemer explained the State live stock sanitary laws, etc.

Dr. Spencer, Sr., upheld Drs. Pierce and Blemer, and made an eloquent plea for the association, approves dropping all feeling toward all "black" veterinarians, should resolve ourselves to attend meetings.

Dr. Megowan complimented the attendance of present meeting and hopes to have them all with us at the next meeting.

Prof. Ward spoke of his experiences in the East and of the importance in building up this association.

Short but thoroughly interesting speeches were made by Drs. Fisher, Creely, Boomer, Keefer, Somers, DeVoe, McCarty, McLain.

Supervisor Whitworth spoke of the work their county has in hand, and trusts to eradicate infectious and contagious diseases from their county.

Inspector Wilson spoke in a very interesting manner of his work, and regretted that he was not a veterinarian instead of an ordinary cowman.

Dr. Dalziel, editor of the long felt want, *The California Horseman*, told one of his irresistible funny stories, and was given the "ha-ha."

Applications for Membership :—Drs. J. B. Boomer, A. J. DeVoe, E. J. Creely, C. W. Fisher, Prof. A. R. Ward, James Somers, John McCarty, Wm. C. McLean, C. F. McCarty, and Jules H. Uri.

Dr. Pierce moved to suspend the rules. Seconded by Dr Blemer.

Dr. Megowan offered a resolution to amend the by-laws in the matter of changing the Secretary's salary from \$25.00 to \$5; initiation fee to \$2, and the yearly dues to \$3. Carried.

Dr. Blemer moved that members owing back dues be reinstated, and dues paid to Jan. 1, 1902, upon payment of two dollars.

Applications for membership were referred to the Board of Examiners, which body requested all visitors present except Dr. Creely to retire to the ante-room. Dr. Creely was thoroughly

questioned by those remaining as to the character of his veterinary college, its present and proposed course, etc. Dr. Creely answered all questions in a satisfactory manner, assured the association that he was and would continue to do all in his power to promote and advance the profession, and requested that the association's Board of Examiners submit his senior students to an examination before they came before the college faculty for final examinations. After lengthy discussion it was agreed to accept graduates of Dr. Creely's college into the association.

Election of Officers.—The following officers were duly elected for the ensuing year :

President—Dr. Wm. F. Egan, San Francisco.

Vice-President—Dr. J. B. Boomer, San Francisco.

Secretary—Dr. C. H. Blemer, Sacramento.

Treasurer—Dr. F. E. Pierce, Oakland.

Examiners—Drs. H. A. Spencer, San José ; C. L. Megowan, Sacramento ; E. J. Creely, San Francisco ; A. R. Ward, Berkeley ; and C. W. Fisher, San Mateo.

A vote of thanks was given to the retiring President, Dr. Sullivan, who responded in kind and relinquished the chair to Dr. Egan.

Dr. Dalziel, Secretary of the Golden Gate Driving Association, extended an invitation to the association to hold their next meeting in the rooms of the Driving Association in the Palace Hotel.

Motion to adjourn was made and seconded. Adjourned.

CHARLES H. BLEMER, D. V. S., *Secretary.*

WISCONSIN SOCIETY OF VETERINARY GRADUATES.

The semi-annual meeting was held at the Kirby House, Milwaukee, September 10th, and was called to order by the President, Dr. C. E. Evans, at 7.30 P. M., with the following members present ; Drs. S. J. Beattie, J. F. Roub, C. H. Armond, H. A. Arpke, E. L. Morgenroth, H. F. Eckert, B. L. Clarke, W. G. Clark, J. T. Pfeiffer, A. H. Hartwig, C. E. Evans, S. S. Snyder, W. S. Powell, R. H. Harrison, E. D. Roberts, Chas. Koehne, J. T. Hernsheim, H. Caldwell, A. J. Nelson, P. J. Wilkinson, S. J. Collins, L. N. Jargo, G. Ed. Leech, and E. R. Flack. Visitors : J. A. McGarry, C. E. Brown, Adolph Eichhorn, Wm. Fotheringham, and C. J. Huenink.

The minutes of the last meeting were read and approved.

The President appointed Dr. C. H. Armond on the Press Committee in place of Dr. Cochrane, who had removed from the State.

Dr. Beattie reported on behalf of the Committee on Illegal Practitioners the receipt of complaints against sixteen illegal practitioners, and that copies of the State veterinary law and notices had been sent them. The question of the prosecution of illegal practitioners was then discussed by Drs. Leech, Powell, Hartwig and Beattie. It was moved by Dr. Leech that the society make a test case of one of the violations of the law, and, if necessary, assess each member from \$5 to \$15 to pay the expenses of the same. The motion was duly seconded, and, after discussion by Drs. Armond, Hartwig, Harrison, Eckert, Collins and Roub, was carried by a rising vote of 13 to 4.

Dr. A. H. Hartwig reported a case of intestinal calculus. This was located in the great colon just anterior to the floating colon. The calculus contained seventy nuclei.

Dr. J. F. Roub reported a case of peritoneal abscess* and described the manner of diagnosis, operation and treatment.

On motion, a vote of thanks was tendered Drs. Hartwig and Roub.

Dr. E. D. Roberts, State Veterinarian, reported an outbreak of disease among cattle in the northwestern part of the State, somewhat resembling anthrax. Several herds were vaccinated with anthrax vaccine, but the results were not satisfactory. About 200 deaths had occurred as a result of the outbreak. Dr. H. L. Russell made a bacteriological examination of the blood and tissues, and discovered a bacillus which he termed the *bacillus hæmorrhagica septicæmia*. Discussed by Drs. Roub, Brown, Eichhorn, Collins, Harrison, Leech, Hernshein, and Hartwig. On motion, the discussion was closed.

Applications for membership were then taken up and the following were received: Drs. J. A. McGarry (C. V. C.), Milwaukee, and C. J. Huenink (C. V. C.), Cedar Grove. The censors reporting favorably, they were elected to membership by an unanimous vote. The applications of Drs. Wm. Fotheringham and Adolph Eichhorn were received for honorary membership, they being stationed at Milwaukee by the Bureau of Animal Industry. Moved and seconded that they be elected. Carried. The gentlemen were declared elected to honorary membership.

* Will be published in an early number of the REVIEW.

Announcement of the clinics at Dr. Leech's hospital at 8.30 the next morning was made. On motion, the society adjourned to meet in Madison subject to the call of the President and Secretary.

The society met Wednesday morning at Dr. Leech's hospital, and Dr. Adolph Eichhorn performed double neurectomy for the relief of bone spavin. The patient was cast with the English hobbles, and Drs. Leech and Hartwig assisted in administering the chloroform. The operation was very quickly and skillfully performed by Dr. Eichhorn.

W. G. CLARK, *Secretary.*

THE VETERINARY ASSOCIATION OF MANITOBA.

This association held its twelfth annual meeting in the city of Winnipeg, February 19th. The President, Mr. W. A. Dunbar, occupied the chair, and the following members were present: W. H. Smith, Carman; W. R. Taylor, Portage la Prairie; W. J. Hinman, Winnipeg; H. F. Whaley, Glenboro; G. W. Harrison, Cypress; J. McGillivray, Manitou; W. S. Henderson, Carberry; W. Swenerton, Carberry; J. J. Irwine, Stonewall; J. G. Cruikshank, Deloraine; J. Golley, Treherne; C. D. McGilvray, Binscarth; J. Welch, Roland; S. A. Cox, Brandon; J. A. Stevenson, Carman; W. E. Martin, Winnipeg; A. M. Livingstone, Melita; M. Whimster, Hamiota; W. A. Hilliard, Minnedosa; R. D. Scurfield, Crystal City; W. A. Dunbar, F. Torrance, H. D. Smith, C. Little, Winnipeg; D. D. Reid, Hartney, and as visitors Drs. Simpson, Yorkton, and Sankey, Waskada.

The President opened the meeting with a few words of welcome to the members and visitors and then read an interesting and instructive address upon the progress of veterinary science.

A letter from the Secretary of the Winnipeg Humane Society was read, asking the views of the association upon the overhead check. After a full discussion of the subject, it was moved by W. A. Dunbar, seconded by Mr. J. A. Stevenson, "That this association, while deplored the fact that some cruelty is inflicted upon horses by excessively high checking with the overhead check, and anxious to do all in its power to mitigate the evil, also admits that the said check can be used without inflicting pain, and in some cases, such as kickers and hard-pullers, is absolutely necessary for their control and the safety of their drivers, and the Secretary is hereby instructed to reply to the Humane Society in the terms of this resolution." Carried.

The Resident Secretary of the A. V. M. A. called the attention of the members to the fact that the next meeting of that association would be held in Minneapolis during the first week in September. Reduced fares would be obtainable from the railways, and all who went could depend upon having a profitable and enjoyable visit. He hoped a large number would take the opportunity.

The Secretary-Treasurer read his annual report, showing a membership of seventy-five and a surplus in the treasury of some four hundred dollars.

The examiners reported that during the year four candidates presented themselves for examination, of which two were successful, Mr. C. D. McGilvray, of Binscarth, and Mr. R. D. Scurfield, of Crystal City, both graduates of the McKillip Veterinary College, of Chicago.

The election of officers for the ensuing year resulted as follows :

President—S. A. Coxe, Brandon.

Vice-President—A. M. Livingstone, Melita.

Secretary-Treasurer and Registrar—F. Torrance, Winnipeg.

Examiners—W. A. Dunbar, W. R. Taylor and F. Torrance.

Other members of Council—W. S. Henderson and W. Swenerton, Carberry.

Auditors—C. Little, W. E. Martin.

The association passed unanimously the following resolution congratulating Dr. Rutherford upon his recent appointment:

"Resolved, That this association rejoices in the elevation of one of its members to the most important post in the Dominion open to the veterinary profession, that of Chief Veterinary Inspector to the Department of Agriculture, and wishes to place on record its appreciation of Dr. Rutherford's work as a founder of this association and as one of its most active members, and hereby tenders him its heartiest congratulations and wishes him every success in his new sphere."

The association also by unanimous vote elected Dr. Rutherford as Honorary Associate.

A resolution was passed to memorialize the Dominion Government to appropriate a sum of money for the investigation of the disease of horses commonly known as "Swamp Fever," which is continuing to cause great losses in parts of Manitoba and the North West Territories.

Dr. W. A. Hilliard read a paper upon an interesting surgical

case occurring in his practice. An animated discussion followed in which the subject of the mallein test was also brought up and some interesting experiences related.

In the hope of inducing the presentation of a larger number of papers at the next meeting the following resolution was passed:

Moved by W. A. Dunbar, seconded by J. A. Stevenson, That three prizes to consist of books or instruments be offered for competition for the best essays or reports of cases presented at the annual meeting, competition limited to members who have never read a paper before the association. The meeting to decide on the merits of the papers. Carried.

After the usual votes of thanks to the retiring President, the essayist and the City Council, the meeting adjourned.

The semi-annual meeting will be held in Brandon in July.
F. TORRANCE, *Secretary.*

AMERICAN VETERINARY MEDICAL ASSOCIATION.

President J. F. Winchester has appointed the following Committee on Local Arrangements for the Minneapolis meeting: Dr. C. C. Lyford (chairman), Drs. S. D. Briihall, M. H. Reynolds, J. S. Annand, J. S. Butler, J. N. Gould, A. Youngberg, S. H. Ward, and K. J. McKenzie.

The local committee has met and organized, forming several sub-committee, each of which are actively at work preparing to make the meeting for 1902 memorable, both in the value and pleasure of attending, also in numbers present. This committee has sent delegates to State meetings held in adjacent territory, and are stimulating a renewed and larger interest in the National Association.

NEWS AND ITEMS.

THE alumni banquet of the New York-American Veterinary College was held at the Hotel Marlborough, New York, April 1.

DR. G. E. GRIFFIN'S article, "Molasses as a Food for Army Horses," published in the February REVIEW, was reprinted in the *Veterinary Journal* (London) for March.

DRS. JAMES A. WAUGH, of Pittsburgh, Pa., and William J. Waugh, of Washington, Pa., celebrated the anniversary of their twenty years' practice on March 31.

DRS. E. M. NIGHBERT and Z. Veldhuis entered the Meat Inspection Service in the Bureau of Animal Industry at Kansas City, March 14th.

DR. H. L. RAMACCIOTTI, of Omaha, Neb., is the proud father of twin boys. At this writing the boys and their mother are doing well.

"I WISH to compliment your successful effort in making the REVIEW the peer of any veterinary periodical published in the world."—(*N. J. Stringer, D. V. S., Watseka, Ill.*)

"CANNOT GET ALONG WITHOUT THE REVIEW. Hope you are getting many new subscribers."—(*A. E. Lambert, V. S., New Windsor, Md.*)

PRESIDENT LOWE'S recent address at Lakewood on "Progress in Veterinary Medicine in its Relation to Public Health," has been well received in medical circles. The *Medical Record* in its issue of February 1st gives space to the entire address.

DRS. J. M. LAWRENCE, F. M. Starr and F. W. Weston of the graduating class of the Kansas City Veterinary College, entered the U. S. Army, Quartermaster's Department, as veterinarians for service in the Philippines, and sailed from San Francisco March 15th.

"YOUR monthly publication has proven a valuable boon to the practitioners and students of veterinary science. I have been a reader of the REVIEW for nineteen years, and I hope I will be able to continue to receive and read it."—(*James M. Reed, Mattoon, Ill.*)

DR. M. E. KNOWLES, State Veterinarian of Montana, visited Kansas City on his way to and return from Fort Worth, where he attended a cattlemen's convention. The doctor expressed himself as favorably impressed with the veterinary outlook in the Central West.

DR. ADOLPH EICHHORN, of the Bureau of Animal Industry, located at Milwaukee, Wis., who so ably presides over "German Review" for this publication, contemplates paying a visit to Europe in June, and promises to spend a few days in calling upon his New York friends.

DR. JOHN S. ANDERSON, Seward, Neb., who had been considered by his old-time friends as a confirmed bachelor, surprised them all by becoming a benedict March 3d, upon which date he joined in life partnership with Miss Myrtle Boyes, of Seward, Neb. The wedding tour included a week's sojourn in Kansas City. A host of veterinary friends congratulate the doctor upon his happy alliance.

ON March 15th Governor A. B. Cummins, of Iowa, appointed Dr. P. O. Koto, of Forest City, Ia., as State Veterinarian, to succeed Dr. J. I. Gibson, of Denison. Dr. Koto has been in practice for quite a number of years and has also been in the drug business. He was a member of the State Legislature during 1900-01. Last year he served as President of the Iowa State Veterinary Medical Association.

VETERINARIAN WILLIAM HERBERT LOWE has been elected a member of the Board of Managers of the Paterson General Hospital and appointed a member of the House and Grounds Committee of that large and important institution for the alleviation of human suffering. We are pleased that the people of the city of Paterson have seen fit to place Dr. Lowe in a position where his knowledge of comparative medicine may be directly applied to the benefit of mankind.

THE FAMOUS "COLORADO INSPECTION CASE" has been won by the State in the Supreme Court of Colorado and will now go to the United States Supreme Court for final adjudication. It will be remembered that in order to get the matter fairly tested Ed. Reid refused to pay State inspection fees on stock to which the Federal inspectors had already given a clean bill of health, whereon he was arrested under the State law, tried and sentenced to go to jail. The case was then appealed to the Colorado Supreme Court, which has now decided in favor of the State. Had the decision been in favor of Reid the matter would have been settled only as far as Colorado is concerned, but when the United States Supreme Court gets through with it the decision will apply to all States equally.

ANIMALS AS DOCTORS.—Every animal doctors itself, says *McCall's Magazine*. Dogs and cats, when not feeling well, eat medical plants, the dog selecting spear grass and the cat showing preference for valerian. They vary this treatment with an occasional dose of ashes or cinders, just as the crocodile, lizard and some birds swallow gravel and stones. The elephant uses its trunk cleverly in dressing wounds, and by this means applies water, dust or mud to the injury. Sir Samuel Baker, the famous big game hunter, saw an elephant plaster up a bullet wound with mud and frequently observed the readiness with which small sores were attended to. Fierce, carnivorous animals, when trapped, often act as surgeons and bite through a limb to free themselves. Rabbits, when wounded, burrow into the ground and lie so that the wound touches the raw earth.

AT the annual meeting of the New Jersey State Board of

Agriculture recently held in Trenton, the following resolution was unanimously adopted: "That the State Board of Agriculture recognizing the necessity and value of competent veterinary service to live stock owners, agricultural interests and the preservation of public health, do heartily approve and endorse the movement for the establishment of a State Board of Veterinary Medical Examiners to regulate the practice of veterinary medicine and surgery in the State of New Jersey."

DR. LOWE'S GREAT LOSS.—The accompanying photo was taken a couple of days after the great fire in Paterson, and represents the front view of Dr. Wm. Herbert Lowe's model infirmary, which, as will be observed, is totally destroyed. The assessed valuation of the property was \$15,000, upon which there was \$10,000 insurance, which was promptly paid. This does not by any means represent the doctor's loss, since his extensive library



of scientific works, which he had been collecting all of his professional life, along with an extensive case of surgical instruments, drugs, and paraphernalia, were a total and irreparable loss. His new ambulance, which cost \$1000, was gotten out and stored in a nearby stable, but during the succeeding flood was greatly damaged. While money can easily replace much of the loss, there are many things gone which cannot be substituted, while the inconvenience and strain upon the nerves can readily be imagined. We know that his professional brethren everywhere extend to Dr. Lowe their fullest sympathy, for he writes the REVIEW asking it to thank them sincerely for their many kind expressions, which, owing to overwhelming circumstances, he cannot find the time to personally respond to. As a mitigating event the doctor greatly appreciates the confidence of his fellow citizens of Paterson, who, while in the midst of his great loss, re-elected him to the position of City Veterinarian.

PUBLISHERS' DEPARTMENT.

Subscription price, \$3 per annum, invariably in advance; foreign countries, \$3.60; students while attending college, \$2; single copies, 25 cents.

Rejected manuscripts will not be returned unless postage is forwarded.

Subscribers are earnestly requested to notify the Business Manager immediately upon changing their address.

Alex. Eger, 34 East Van Buren St., Chicago, Ill., Veterinary Publisher and dealer in Veterinary Instruments, Books, and Drugs, is the authorized agent for the REVIEW in Chicago and the Middle West, and will receive subscriptions and advertisements at publishers' rates.

REVIEW readers will be pleased to find on page 1 (ad. dept.), of this issue, the name of one of the most widely known veterinary instrument houses in America, "Haussmann and Dunn Co.," and it will be particularly gratifying to our large circle of friends in Chicago, to find this representative instrument house of their city, show its appreciation of their much loved veterinary magazine, by lending it the support it deserves from every firm who supply goods to the veterinary profession, by using it as an advertising medium: and we trust that the veterinarians will demonstrate their pleasure and gratification, by a hearty return of their support.

The Revere Rubber Company's Air-Cushion Rubber Horse Shoe Pad, needs no "puff;" "it fills with air at each step."

The Abbott Alkaloidal Company, the father of Alkalometry in Veterinary Practice, have done much toward placing the practice of medicine in animals and man on the same plane, and to broaden the possibilities of veterinarians in canine practice.

The Buntin Drug Company still continue to add to their already excellent list of soluble hypodermic tablets, prepared expressly for the use of the veterinary practitioner.

Atkins & Durbrow, of 160 Pearl Street, New York, continue to supply veterinarians with their celebrated intestinal tonic, "Red Ball Brand Stock Food," and they receive the most flattering testimonials from those who employ it regularly in their practices.

A slight error in the advertisement of the "Combination" Veterinary Dental and Surgical Halter, in the March REVIEW by the accidental insertion of the two extra words "instead of," was very misleading, as the nose-band (in the description of which the error occurred), is *heavily padded*, and covered with the softest of leather. The corrected ad. appears opposite page 1 (ad. dept.) of this issue.

REVIEWS WANTED.

The publishers will pay 25 cents each for copies of the April, 1901, issue. Address, Robert W. Ellis, D. V. S., Bus. Mgr., 509 W. 152d Street, New York,

American Veterinary ~~Journal~~ Association
Journal

AMERICAN VETERINARY REVIEW.

MAY, 1902.

All communications for publication or in reference thereto should be addressed to Prof. Roscoe R. Bell, Seventh Ave. & Union St., Borough of Brooklyn, New York City.

EDITORIAL.

EUROPEAN CHRONICLES.

“WHITE SCOUR” AND LUNG DISEASE.—I have already called the attention of our readers to these diseases and recorded the interesting investigations that Prof. Nocard has had the opportunity to make in Ireland, assisted by a commission appointed by the Board of Agriculture.

The results have been most wonderful, and again the superiority of the learned bacteriologist has found the opportunity to make itself known, adding to his previous laurels one of no less shining brilliancy. Indeed, as Prof. Mettam remarks on his Report to the Department of Agriculture ; to the discoveries already made in relation to tuberculosis and glanders ; to the results that may be obtained by repeated injections of mallein in animals suffering with that disease ; to those resulting from his investigations of contagious abortion, which caused him to discover its microbic origin and permitted him to prepare a successful preventive treatment ; to his researches which allowed him to discover the true bacillus of contagious pleuro-pneumonia, a discovery which had long baffled experienced bacteriologists in all parts of the world ; and now to all this Prof. Nocard has added the discovery of the disease which is so fatal to newly-born calves, the “White Scour” and the Lung Disease.

The results of his researches, aided as he has been by the assistants officially appointed by the Irish Department of Agriculture, are resumed in brief as follows : The two diseases, in

spite of the difference in seat and symptoms, are one and the same disease : this is caused by a specific microbe or *pasteurella*, which Nocard identifies with the microbe which in horses produces pseudo-farcinous lymphangitis, and in sheep adenitis and caseous broncho-pneumonia ; it is by the umbilicus or navel cord, and at the moment of parturition, that the germs of the malady enter ; prophylactic treatment of the umbilical infection will succeed in stamping out Lung Disease as well as "White Scour."

And in his report, Prof. Mettam adds : "Prof. Nocard has placed the agriculturists, not only of Ireland, but of the entire world, under obligations by the most successful issue of his admirably conducted series of experiments and investigations."

I have already told you in the REVIEW of parts of the work carried on in relation to those diseases, and related the treatment which had been decided upon. From the report of Prof. Mettam, I find short statistics of the results obtained by that treatment. The mortality has dropped down to 30 per cent., while previous to it, it had been much higher—35 calves dying out of 36 born, 41 out of 46, 60 out of 70, 90 out of 100. And it is claimed that in that mortality of 30 per cent. there are evidently deaths which would not have occurred had the treatment been carried out to the letter, which was not always the case.

In the meanwhile, when the experiments were going on, attempts were also made to find a suitable therapeutic treatment, principally for those suffering with Lung Disease. A serum treatment was then tested with a few calves, the results of which are so far very incomplete and probably not sufficient to draw conclusions from, yet they are encouraging when the disease is attacked early, as when it is advanced and the lesions in the lungs are serious, very little effect can be expected.

For those of our friends who may desire more information I will refer them to Bulletin No. 1 of the Report of Prof. Mettam to the Department of Agriculture for Ireland at Dublin.

* * *

GLUCOSURY IN RABIES.—When one takes into consideration

the difficulty in which he is placed in making a positive diagnosis of rabies when in the presence of the cadaver of an animal which has succumbed or been killed because of suspicious symptoms, every thing which may enlighten him will always be resorted to, if it can add to his conclusions. On that account the researches which have been made by two teachers of the Veterinary School of Lyon are deserving great attention.

Indeed, M. M. Rabiscaux and Nicolas have worked in that direction, and it is to the presence of sugar in the urine that they have turned their attention.

In various epochs, the existence of sugar in the urine of mad dogs has been proved. Nocard among the first remarked that the presence of glucosury offers a certain interest to the point of view of the *post-mortem* diagnosis of rabies, and that if it had not a positive value, it at least increased the probabilities of the disease being present.

Later on, Porcher, also of the Lyon School, found glucose in the urine of rabid goats, and Gibier has recorded the same discovery in the REVIEW.

The existence of sugar in the urine of some rabid subjects being proved, it became imperative to make the urological examination of the greatest possible number of animals affected with natural or experimental rabies to find out if glucosury was a *constant* and an *early* symptom, and if by that it could become a useful element of *post-mortem* diagnosis of rabies.

The researches for sugar were made simultaneously, and with the object of controlling it, whenever the quantity of urine collected allowed it, with the reaction of Fehling, and in utilizing the propriety that phenylhydrozine has to give with glucose when treated by heat in an acetic medium, a crystalized compound, phenylglucosazone, which appears under the microscope with a typical aspect.

The total of their investigations embraces the examination of the urine of 138 cases, taken among carnivorous, herbivorous, and omnivorous animals, the last being that of a woman affected with hydrophobia.

From these, important conclusions are recorded as follows :

For *carnivorous*, the constancy of glucosury can be considered as an element of diagnosis, affirming the probabilities rising from the history of the case and the lesions found ; by itself, taking into consideration the frequency of its presence, it even constitutes a suspicion of the disease. Although not absolutely constant, its apparition being sometimes slow, failure in discovering it cannot allow the practitioner to eliminate rabies.

For *herbivorous*, the presence of glucosury has specially a real diagnostic value, although it may be observed sometimes in other affections than rabies—parturient fever, for instance. The importance of this symptom does not derive its value from its constancy only when animals have died from rabies, but also from the want of characteristics in the lesions observed when information is wanting.

Practitioners, in the presence of a cadaver have now another way to make out a diagnosis in obscure cases.

* * *

ARYTENOIDECKTOMY.—There can be no more doubt that this operation has made sufficiently its proofs to be admitted into general practice. The results obtained by the many operators all over the world speak in its favor. But, of course, it is of arytenoidecktomy as for all other operations. It has its advocates, and also its adversaries. Some consider it as a panacea for all roarers ; others think that it is successful only in exceptions. Both of these opinions are exaggerated, and there exists certainly a just average, which can be well appreciated by the opinion of Prof. Cadiot when he says : “The proof is made, over and over again, arytenoidecktomy allows many roaring horses, which we condemned to be tracheotomized, to render much service and do various kinds of work.” This is evidently the proper way to consider the indications for the operation.

A great objection has been made, and a serious question has been asked : Why do roaring horses which have been operated upon become roarers after the operation ? Explanations of this are quite numerous ; extension of the paralytic process to the

posterior crico-arytenoideus muscle of the right side, abnormal cicatricial retraction, producing stenosis of the glottis, chronic laryngitis, general chondritis of all the cartilages of the larynx, etc. But there is another, says Prof. Hendrickx, which is a more or less marked contraction of the entrance of the trachea, and which may occur frequently, and for him results from the transversal section which is made of the tracheal rings—be it the first three, as in the modes of Stockfleth and Gunther, or two, as in the method of Möller, or even one, as in the operation of Cadiot.

To remedy this annoying contraction Professor Hendrickx, in the *Annals de Belgique*, describes his *modus operandi*, with modifications of the methods in use, and which consists in incising the crico-arytenoid membrane, the cricoid cartilage and the crico-trachelian ligament. There are also some little changes of less importance; for instance, instead of the tracheal tampon canula of Möller, he resorts to tracheotomy on the upper third of the trachea; uses a tampon of wadding dipped in Van Switen solution and wrapped in gauze, which he pushes into the trachea; removes the cartilage, but is careful to have a small lamella close to the crico-arytenoid joint; no suture is applied on the laryngeal muqueuse. When the cartilage is removed the tampon of wadding is drawn into the larynx to control the haemorrhage and the thread that holds it is secured with the suture that is made to close the external muscular wound.

According to this *modus operandi*, which Prof. Hendrickx has succeeded in executing in ten minutes, cicatrization of the wound goes on rapidly; in three weeks the animal can resume work and has one chance less of becoming again a roarer.

* * *

Latterly, while perusing some of our exchanges inquiring for subjects which would interest our readers, and permit me to deserve a little my claim of European chronicler, my attention was called to a concise article in the journal published by one of the French veterinary schools, which sent my thoughts

flying back to New York, to the United States, and made me ask, I wonder if our veterinary schools in America would do that?

The article was written by one of the professors, the one who occupies the chair of bovine pathology, and consisted into a call that he addressed to all the practitioners within reasonable distance of his place of teaching, for clinical material.

As a foot note to the record of an interesting case, he said : "I would be thankful to those of my colleagues having in their practice animals affected with serious diseases, that for some reason or another owners would not care to have treated, to send them to me."

How professional this case is ! how it indicates the desire on the part of its author to gain for his class, for his students, all kinds of opportunities to perfect themselves. He adds : "They will be treated gratuitously, no matter how long the treatment ; their traveling expenses to come and return shall be paid ; if they are incurable the school will buy them for operative exercises, etc."

Yes, this brought me back to New York, to years past, when clinical material was sometimes hard, very hard, to obtain, and I asked myself if the same condition exists to-day ; I hope not, but if it does, why should I not send my American readers, who may perhaps be in the same perplexity, where I have been, the indicator, by which they can remedy their troubles. Veterinarians of America are no less lovers of their profession than Europeans ; they are just as ready to help their future young *confrères* ; I am quite sure they would, in the various States, when they are close to veterinary schools, be too willing to furnish the clinical material that those might demand. I do not know if one professor has ever tried it to-day, but I am quite certain that if it was attempted it would bring lots of important material for knowledge, observation and instruction, far superior in quality as well as quantity even to the free clinics that were years ago resorted to.

A. L.

EFFORTS WORTHY OF SUCCESS.

We have for a number of years followed with admiration the course of the Maine State Veterinary Medical Association ; although having a membership of but a handful of veterinarians, the meetings have been held with a regularity that few larger societies could boast of. Scattered over the State, at points far distant, the devoted members with persistent regularity drop their private affairs and journey to the place designated, and, if for any reason attendance in person is impossible, a letter of regret acts as a proxy, and usually is full of cheering words to those who have gathered together for the annual or quarterly meeting. Seldom have they met and failed to listen to some paper of interest and value, and on each occasion they discuss means of advancing the interests of their beloved profession, while at almost every session of the legislature a committee of this association importunes it for a law to regulate the practice of veterinary medicine. Each year they are doomed to disappointment ; but, nothing daunted, they are back at the next session, a little more earnestly, slightly more insistent than in the preceding year. In the present number of the REVIEW, the committee reports its absolute failure to make any impression upon the legislative solons, and in the next breath rallies the members to a renewed effort, and a larger, stronger committee is appointed to carry on the fight at the next session.

Such heroic efforts to elevate a calling cannot fail in the end to be productive of success, and we extend our congratulations, trusting that this noble band may soon place their State in the column with those that have won their laurels, of which the most recent and best example is New Jersey.

THE MINNEAPOLIS MEETING.

The veterinarians of Minneapolis are allowing no stone to be unturned to insure a successful meeting of the American Veterinary Medical Association in their city next September. The local Committee of Arrangements has divided itself into sub-committees to take charge of the different sections of the pro-

gramme ; they have visited various neighboring association meetings to enlist their interest, to insure a full attendance of the veterinarians of the Northwest, and to secure their coöperation in making the educational programme so enticing as to invite the presence of those from different sections of the continent. Further, they are urging the men of that territory to associate themselves with the national organization as members, thus strengthening both the association and the profession of that region. From what we know of the local committee, and from all we can gather through a somewhat voluminous correspondence, a safe prediction is that the Minneapolis convention is to be the banner meeting of the A. V. M. A.

IN the June REVIEW will be published the first installment of a series of articles entitled "The Living and the Dead : Reminiscences of the Veterinary Practitioners of Forty Years Ago." Fresh from the pen of one of the most conspicuous members of the profession of those days, whose acquaintance was national, these papers cannot fail to be both accurate and interesting. While the history of veterinary education in America has been written in numerous articles, read before associaton meetings or contributed to the veterinary medical press, no attempt has ever been made to depict the *personnel* of the early days of the profession, and thus the reminiscent contribution of this historian will be gladly welcomed.

THE rumor was persistently heard in Boston on the occasion of our recent visit to the Hub that Harvard will reopen her veterinary school when the new buildings for the medical department are completed. Messrs. Rockefeller and Morgan have endowed the university with four or five millions of dollars, with which wonderful modern buildings and appliances for the School of Medicine will be created, and the general belief is that she will revive her veterinary department upon a firmer enduring basis than in former days.

ORIGINAL ARTICLES.

TROPICAL ULCERS OF THE HORSE.

BY OLOF SCHWARZKOPF, VETERINARIAN (1ST CLASS) 3D U. S. CAVALRY, VIGAN, P. I.

One of the tropical diseases from which our American horses are afflicted in the Philippine Islands is an ulcerative skin disease to which the name of "tropical ulcers" has been applied at present. It is most probable that this skin disease has been known to army veterinarians who have been serving in tropical climates before us; at least I remember the description of a disease called "African farcy" in an English veterinary journal, which seems similar to, or may be identical with, our tropical ulcers in the Philippines. However, being without any veterinary literature whatever, I am unable to verify this statement at the present time, but abstain from giving a technical term to a disease which in all probability has been named before.

Symptoms.—"Tropical ulcers" appear soon after the rainy season has set in and gradually disappear after its closure. The favored seat of the ulcers is the inner surface of the lower region of the hind legs, but occasionally they appear as high up as the inner surface of the hock or thigh. They are seldom noticed until well formed, but if a horse already affected is watched, the development of new ulcers can be readily observed.

The primary lesion consists of the formation of a papule of about the size of a ten-cent piece, which is superficial, involving merely the epidermis, and bursts within a day or two, discharging a serous fluid. If the papule is opened and the contents collected in a glass tube, they appear as a clear, amber-colored fluid. After bursting the epidermis collapses, becomes necrotic and sloughs, exposing a round-shaped, suppurating ulcer of the size of a ten-cent piece, the edges of which are markedly well defined. In ordinary cases the number of ulcers does not exceed from two to six, and they remain confined to the region of the fetlock.

Aggravated cases of "tropical ulcers" are exceptional. If seen in full development they present a clinical picture which is quite dissimilar to the ordinary cases. The number of ulcers is greatly in excess of the average, representing fifty, sixty, or more, covering both the inner and outer surface of the hind leg clear up to the stifle. Isolated ulcers may appear on the abdomen, some on the breast, and in one case they were observed on the nose of a horse. In these cases many ulcers become confluent, forming irregular-shaped ulcerations of the size of a dollar or larger. Yet, even in severe cases, the ulcers remain principally confined to one hind leg, which becomes gradually enlarged by an even, doughy swelling which is painful to touch. If such cases finally heal, the horse remains permanently disabled by an enlarged leg resembling elephantiasis.

The American horse is the animal which suffers most from tropical ulcers. American mules are rarely afflicted and no severe case has been observed amongst them. The native pony, too, is seldom seen with tropical ulcers, and if so, does not seem to mind the sores. No ulcers have been observed on oxen and carabaoas.

Differential Diagnosis.—The severe cases of tropical ulcers resemble farcy. Such a case is illustrated by the accompanying photograph which was taken in the morning before the sores were dressed, and shows the suppurative discharge from about twenty ulcers covering the inner leg, in dirty, yellowish streaks running down the leg. A competent veterinarian can have no difficulty in making a correct diagnosis, because the ulcers are of even size, well opened and round, do not involve the derma and do not follow the lymphatic vessels. The characteristic farcy buds are, therefore, absent. But the layman considers it a case of farcy at sight, and officers in charge of horses have repeatedly reported so, asking for permission to destroy the animal.

Etiology.—It is obvious that there exists a relationship between the tropical ulcers and the rainy season, because no ulcers have been observed in the dry season, and as soon as this commences new cases cease to appear and those under treatment

heal rapidly. There is no doubt, also, that the specific cause of these tropical ulcers must be a germ, but it is not one easily to be determined. In the twenty microscopical examinations which I have made so far of the contents of papules from different horses, I have not succeeded in finding a specific germ, while the surface of the ulcer abounds in pus-cocci of different varieties. Although these few examinations have given negative results, it must be understood that no facilities are provided



the army veterinarian to do such work, while our army medical colleagues are heralding their secondary discoveries in veterinary medicine with fat headlines in Manila papers and by circulars from Headquarters, with recommendations at once unnecessary and ludicrous because utterly impracticable.

Therapy.—The treatment of the ordinary cases of tropical ulcers is simple and effective. The daily cleaning with water

and soap, the disinfection with some antiseptic lotion and covering with absorbent cotton and bandages brings about a ready cure. Of the antiseptics carbolic acid is the last to be chosen because irritating, while creolin (Pearson) has given the most gratifying results. This and absorbent cotton were liberally furnished during the campaign by the medical supply depot, with which the veterinarian has no relation in time of peace. Next to creolin the white lotion is to be recommended, while ointments of any kind are absolutely to be discarded as the process of suppuration seems to be rather helped along by their use in the tropics.

The treatment of aggravated cases presents a more serious problem. If the whole leg is attacked by tropical ulcers, it is always considerably swollen and painful, and as can be imagined it is next to impossible to keep it wrapped up in cotton and bandages from the restlessness of the horse. If this is not done the ulcers gradually get beyond control, and blood poison sets in with fatal result. In those cases which are finally cured, after months of treatment, the leg remains permanently enlarged, dotted with star-like scars which become easily sore again, thereby preventing any use of the horse, so that he has to be condemned as unfit for service.

From the facts so gathered it has become evident to us that all depends upon an early and correct treatment of the tropical ulcers, to heal them, so to say, in their first stage of development. This is not always attainable in an army in the field, because the demand for horses is great, they are kept marching constantly, and the utter absence of proper veterinary equipments for actual warfare does the rest.

"I HAVE been a subscriber to the REVIEW through a news agent of this place for one year, beginning with the first of Vol. XXV, and I do not see why I ever went so long without it, as I have been practicing veterinary medicine and surgery for 18 years; it surely is a valuable visitor, and I will never be without it as long as I am able to pay for it. I have had some rare cases in my practice, which I will try to describe some time when I have time for the REVIEW."—(L. T. Lewis, Gallatin, Tenn.)

RABIES.

BY D. E. BAUGHMAN, M. D. C., FORT DODGE, IA.

Read before the 14th Annual Meeting of the Iowa State Veterinary Medical Association,
Feb. 11 and 12, 1902.

At the earnest request of the President and Secretary I have endeavored to prepare a paper on rabies, a disease that has interested me the past season, and I hope I will be successful in interesting other members of the association.

There has, perhaps, never been a time when it was more important than at the present for the veterinary profession to have a clear appreciation of the subject of rabies in animals and man. There was a time in the period of the profession's existence when there was excuse for differences of opinion in regard to this disease. It was a time when we depended solely upon clinical observation of accidental cases, and when the conclusions were founded upon imperfect evidence. But that time is past. To-day we have a science resting upon an experimental basis. Facts and conclusions have been established just as rigorously and as solidly as in other departments of medical science.

As members of a learned profession it is our duty to know what has been accomplished by scientific investigators of rabies, and particularly is this duty incumbent upon those who attempt to teach other members of the profession or the laity as to the facts in the case. We have reached a point where the intelligence and scientific knowledge of the veterinary profession are liable to be unjustly questioned because of a few mistakes of misguided individuals who persist in reiterating beliefs which were never held by a majority of the profession and were discarded and disproved years ago. It appears to the writer simply astounding that there are educated men, much less physicians and veterinarians, who will still doubt the contagiousness of this disease, which was known and described in ancient times, and which for a century has been the subject of experimental investigation by very able men who have occupied their minds with pathological questions. Nevertheless, it is a fact that the sani-

tarian of to-day who tries to control rabies meets the same kind of argument which was used to embarrass his profession centuries ago. These arguments are most industriously circulated by the so-called humane societies, which oppose all conclusions based upon experiments with animals and which imagine that they are doing a great work for dogs and cats by casting discredit upon science, even though by so doing they perpetuate this terrible disease, of which dogs and cats are the principal victims.

Aristotle described rabies 400 B. C., and indicated its transmissibility in these terms: "Dogs suffer from hydrophobia, which provokes in them a state of madness; all animals bitten by dogs affected become rabid in the end." From that time to the present we have clear accounts of the disease existing through every age and provoking horror and fear in many centuries. It was always said to be caused by the bite of an animal, which animal was generally alleged to be rabid. It was almost universally described as fatal in man and animal.

Aristotle admitted that the disease was fatal to dogs and every other creature which they bite, except man. This early mistake in regard to immunity of man has been handed across the centuries and is still repeated on every hand by those who oppose measures for the prevention of the disease. It may be freely admitted, therefore, that there have probably been many, at all ages who have doubted the existence of the disease, both in mankind and in animal, that numerous articles and books have been written to prove that the disease called rabies is not contagious, and that the supposed rabies of man is lyssophobia, a nervous affection brought on by fear and excitement.

The medical profession as a whole, however, always recognized the existence of such a disease as rabies in man and the veterinary profession has from its foundation recognized its existence, and the contagiousness of the disease. Its schools from the earliest to the latest have constantly taught this doctrine and the present text-books are all unanimous on the subject.

The doubts raised from time to time concerning rabies and

its characteristics have been met by scientific experiments.

Zinka, in 1804, announced that he had inoculated a dog, a rabbit, and a cock with saliva from a rabid dog, taking the saliva with a brush from the animal soon after its death and spreading it over superficial wounds of the inoculated animals. The dog was inoculated on an anterior limb and showed prodromic symptoms on the 8th day and was rabid on the 9th. The rabbit was rabid on the 14th day and cock on the 11th day. This experiment, early in the 18th century, proved that the disease of the dog, called rabies, was communicable by inoculation to the dog, the rabbit, and the fowl. It proved it to be a specific disease, and that the virus existed in the saliva.

Reifershield, in 1813, records an experiment in which several dogs were inoculated, part with fluid and part with dried saliva from a rabid dog. These became affected with rabies after 8 to 10 days.

Bendt, in 1822, inoculated four wethers with saliva from the mouth of an ox which had died of rabies. All of these sheep contracted the disease, the period of inoculation being from twenty-two to thirty-one days.

In Hertwig's experiments, he produced rabies by inoculation in 37 per cent. of cases. Renault produced it in 67 per cent.

Haubner gives an average of 40 per cent. of cases in rabies which was contracted through bites. Bollinger states that in man infection occurs in from 8 per cent. to 47 per cent. of bites. Pasteur says the proportion varies from 16 per cent. to 80 per cent. When cauterization is not performed, it reaches 83 per cent. Bouley found that 90 per cent. suffered after bites on the face; 63 per cent. after bites on the hands; 24 per cent. after bites on the arms; 77 per cent. after bites on the legs; and 63 per cent. after bites on the body. The susceptibility of sheep is known to be slightest, as the teeth of the biting animal are likely to be cleaned on the wool. Much, however, depends upon the stage of the disease, and the abundance and virulence of the virus in the saliva, as well as upon the susceptibility of the subject. Some animals are insusceptible, either naturally

or by reason of their having been previously subjected to the action of the virus. Yet, under a full virulent dose, nearly all succumb. The theory that rabies kills more animals in summer than in winter has been weakened by statistics. Burrell has shown, according to the record of cases of rabies in his infirmary from 1859 to 1872, that they were not more frequent in summer than in winter. Three hundred and fourteen cases of rabies of the dog observed at the Alfort school during the years of 1887 to 1890 are divided as follows: January, February and March 130 cases; April, May and June 60 cases; July, August and September 50 cases; October, November and December 47 cases. Bouley records a greater number of cases in December, January and February than in any other three months of the year. The real explanation of the greater prevalence in the spring and summer is found in the fact that bitches rut in the spring and a number of the candidates for their favors bite each other fatally. This is aggravated by the fact that the generative instincts are stimulated in the early stages of rabies. This further explains the predominance of rabies in males. The irritable rabid dog antagonizes his male competitors and respects the female object of their common desire. There is, of course, only one cause of the disease, namely, inoculation from an animal suffering from the disease, although excitement will hasten the eruption in the inoculated animal.

It may be assumed that the virulent principle which causes the disease is an organic germ, but so far all attempts to isolate and cultivate it in pure culture have resulted in failure and the microbe cannot yet be certainly identified.

Rabies agrees with all other germ diseases, in that it develops only after inoculation, in that one attack usually fortifies the system against a second, and that in Australia, Tasmania, New Zealand, St. Helena, South Africa, and West Africa, from which mad dogs are excluded, it has never appeared, while in Buenos Ayres, Hong Kong and Malta, where they have been allowed freedom, it has become prevalent. What has never occurred in the past never need to be looked for in the future.

Cases in which infection is denied because the dog was shut up will be explained by a more thorough investigation. Rabid dogs will leap high fences to reach supposed enemies, and rabid rats and other vermin enter through small holes.

Rabies, like most microbian diseases, is at first confined to the region of the bite and the tissues there alone are infected. When fully developed the infection is resident in the blood and all vascular tissues, yet the usual source of infection is through the bronchial mucus and the saliva, both of which are especially virulent and are naturally implanted by the teeth. This virulence is not confined to carnivora, but has been experimentally demonstrated in omnivora and herbivora. Various cases of infection from man to man are on record. Drying of saliva or blood, apart from heat or putrefaction, does not destroy its virulence. The knives fouled on rabid animals have been used for successful inoculation months and years later. Among other methods of infection, besides the bite, may be named the licking of sores by a dog in the early stages of rabies and the occupation of kennels or stalls that have previously harbored rabid animals. Rabies has been known to attack a second pack of hounds after the first pack had been killed out because of the disease. In one case a man was infected by using his teeth to untie a knot in a rope that had been used to tie a mad dog. Infection in man has been caused by a bite from a dog that had been previously fighting a rabid dog, and again from the scratch of a cat that had been licking its claws. In some cases of incipient rabies in dogs the saliva has been virulent before any outward symptoms were shown. Hence, all dogs, however sound in appearance, should be objects of suspicion in an infected district.

The anatomical alterations found in autopsies upon rabid animals are neither constant nor specific. Rabies is especially characterized by the absence of important organic lesions. There is emaciation, mucus about the eyes, mouth, nostrils and prepuce; staring coat; venous congestion; the tongue has a dirty brown fur; in the dog foreign bodies, such as straw, hair,

pieces of wood and clothing, may be found in the mouth and pharynx ; the stomach is congested and contracted ; it contains little or no food, but a mixture of foreign bodies, and indigestible substances which are highly characteristic of the disease. Wortley Axe in a total of 200 autopsies has found in 180 cases, or 90 per cent., absence of food, and the presence of indigestible foreign bodies in the stomach. For him, this latter fact is the most important from a diagnostic standpoint. Post-mortem diagnosis can be established with certainty only by inoculation, but when at the autopsy of a dog which has manifested aggressive tendencies during the last period of life, or which has bitten animals or people, we recognize the ordinary symptoms of rabies, especially the presence of foreign bodies in the stomach, we must, without hesitation, affirm the case to be rabies and proceed accordingly.

Babes describes changes in the nerve cells with cloudiness of the protoplasm. These have been especially noticed in connection with the motor centres in the medulla oblongata, but also in the gray matter of the cerebrum. The nerve trunks, too, may be the seat of congestion, and the fibres undergo a granular degeneration.

The lesions to be especially relied on in the dog are the congestion of the fauces and throat ; the congested, infiltrated, or ulcerated state of the stomach ; the absence of food ; the presence of foreign bodies ; some congestion of the small intestines ; empty, or nearly empty, bladder ; mucus or muco-purulent secretion oozing from various openings ; congestion of superficial veins ; congestion of the brain and meninges. These with the history of the cases are usually sufficient to identify the disease. It should be added, however, that in the paralytic or lethargic form in the dog there may be an entire absence of foreign bodies in the stomach.

Of the 17 cases in the dog that I have met with in my practice in the last year, most of them were of the paralytic form. Seven out of the 17 cases have been of the furious form. Ten of the animals were either known to have been bitten or had been

exposed to rabid dogs. The remainder were not exposed to the disease to the knowledge of the owners, yet it is possible that they were, not having been confined and having had access to the street at will. The period of incubation varies greatly. In inoculation with potent virus or street virus upon the brain, it is six days. In other parts of the body it varies from 16 to 240 days, with an average of 25 days.

Rabies appears under two clinical forms, which are designated by the expression of furious rabies and mute rabies. Formerly these two forms were considered two distinct diseases, but this view has been abandoned long ago.

According to Pasteur furious rabies occurs when the brain is invaded by the rabid virus, and mute when it reaches the spinal cord first. His claim is that we may produce the former experimentally by directly depositing the virus on the surface of the brain, the latter by injecting it into subcutaneous connective tissue. I rather doubt the correctness of this assertion, as I am inclined to think that only a very small per cent. of dogs are bitten on the face compared to the number bitten on other parts of the body. While in man the per cent. of bites on the face is very small, the majority of cases of rabies in men are of the furious form. By depositing the virus directly on the brain, it produces a disease within a very short period of incubation, which possibly accounts for the activity of the symptoms excited by this form of inoculation.

The prevention of rabies can be accomplished in cities and towns only by passing ordinances and compelling owners to muzzle their dogs when the outbreak occurs in a community. The animal should wear an efficient muzzle, as rabies is propagated in nature only by biting. Such a regulation, if strictly enforced, would stop the transmission of the disease, and soon lead to its disappearance.

As the disease is just as prevalent in winter as in summer, the dogs should be muzzled the year round, until the disease has made its entire disappearance. However, this is at once opposed by a class of citizens holding it to be cruel and unnecessary.

Some muzzles are unquestionably cruel, but a properly made muzzle is not cruel, nor does it greatly inconvenience the dog after he has become accustomed to it. A certain kind of muzzle should be prescribed by the authorities. It should be one which covers the mouth with a wire cage so as to prevent biting, but which does not interfere with the movements of the mouth and the ingestion of liquids. There are many who claim that the dogs do not wear the muzzle at home and that when they develop rabies and escape it is always when they are not muzzled. Admitting this argument to be true, nevertheless it is a fact that if all dogs were required to be muzzled when in public, the appearance of a dog without a muzzle would at once attract attention, leading persons to avoid it and causing its early seizure by the authorities. Children might be taught to fear unmuzzled dogs and to keep at a distance. The results which have been attained by muzzles justify the enforcement of a muzzling ordinance whenever there is an outbreak. In Berlin, where a rigorous muzzle law was enforced, the disease was entirely eradicated. Also, in Great Britain the muzzle has been adopted with great success.

The treatment of the bite should receive first attention. If possible, the wound should be cauterized by actual cautery. If not, chloride of zinc, bichloride of mercury, caustic potash, silver nitrate, or sulphate of copper or iron should be used. Care should be taken to apply it thoroughly to all recesses of the wound. If mineral acids or other liquid caustics are employed, they may be delivered into the minute recesses through a pipette or a plug of cotton wound around a stick or with a syringe. A delay of several hours or days is no warrant for omitting cauterization, for in man it has always a good moral effect in preventing hydrophobia, and it is also possible that the poison may remain for some time in the region of the sore.

Senn's advice is to excise the adjacent tissue. This may be followed, but not to the exclusion of a thorough disinfection.

When a person has been bitten by a dog with symptoms of rabies, the dog should not be killed, but should be chained in a

place where it will have no chance to do harm to any one. There it should be kept until the disease has had a chance to thoroughly develop. If it dies from rabies, and the bite has not had the necessary treatment, the bitten person should at once take the now famous Pasteur cure. The Pasteur Institute at Chicago has been established eleven years, in which time 1262 patients have been treated. Of these only seven have died, making a death rate of less than one-half of 1 per cent. As a remedial agent for the bitten the Pasteur treatment is unquestionably effective, as is shown by the great per cent. of cures.

DISCUSSION.

Dr. Lyford related a case of rabies in a horse. The horse was bitten by a dog on the nose and later on the hind limb while being driven through the street by his owner. The offending dog was killed. On the 20th day the horse was reported by the owner to be acting strangely. Dr. Lyford visited him, found him acting violently and showing a great tendency to bite every one except his owner, who could handle him without difficulty. A diagnosis of rabies was made and the owner instructed to tie him with a chain. The next day the horse was much worse and the tendency to bite was much more developed. The stall bore marks of the animal's teeth and his mouth was injured and bleeding. A broom was held out to the horse and he grasped it in his teeth and shook it as a dog would shake a rat, then lay down and rolled upon his back still holding the broom firmly in his jaws. The horse was killed, and the head sent to the University of Minnesota. Three rabbits were inoculated subdurally and in due course of time developed rabies.

Dr. Repp described the microscopic changes detailed by Van Gehuchten and Nelis in Europe and later by Ravenel and McCarthy in this country.

Dr. Brimhall reported a case in his experience in which it was proven by successive rabbit inoculations that the milk of a cow suffering from rabies was virulent and capable of producing rabies.

A FATAL CASE OF INDUCED TEXAS-FEVER.

BY DR. CHARLES F. DAWSON, PROFESSOR OF VETERINARY SCIENCE,
FLORIDA AGRICULTURAL COLLEGE.

It is a fact well known to bacteriologists that animals may be made susceptible to bacterial diseases from which they are ordinarily immune. Chickens are immune from anthrax, but Pasteur was able to remove this immunity by immersing them in cold water. Infections may be rendered more acute when complicated with the presence of another micro-organism, or with the product of other microbes, and some chemicals. The *Streptococcus erysipelatis* may lose its pathogenicity from artificial cultivation and fail to kill rabbits when inoculated into them. Its pathogenic properties may be regained, however, if the rabbit is injected at the same time with the products of *Bacillus prodigiosus*. The same is true of quite a number of micro-organisms. Thus, double infections in tuberculosis run a more rapid course. In some diseases, for instance, in a double infection of anthrax and erysipelas the animals may not die of anthrax, which is ordinarily fatal, but frequently does die of erysipelas, which under other conditions might have been harmless. This shows that while the products of erysipelas antagonize those of anthrax, the toxin of anthrax increases the toxicity of the erysipelas toxin. The introduction simultaneously of certain substances into the tissues along with microbes frequently increase their pathogenicity to a very marked degree. For instance, the addition of an organic acid, lactic, or acetic, for example, to cultures of *B. anthracis symptomatici* increases its virulence. It is well known that scrub cattle are much more refractory to this organism than graded and blooded cattle. In fact, it is difficult to cause a fatal infection of black-leg in scrub cattle. In every instance I have been able to produce a rapidly fatal infection in scrub cattle with cultures, or dried spores of the bacillus of symptomatic anthrax, by the simultaneous injection of an insoluble material, such as sterile plaster of Paris, fine sand, or ground glass. These results can be ex-

plained upon the theory of the devitalizing action upon the tissues of the insoluble substances injected. Bruising the tissues at the point of inoculation also is known to aid infection. Surgical operations, such as dehorning and castrating at the time of vaccination, are advised against by the manufacturers of black-leg vaccine. Vaccination produces a mild, non-fatal type of black-leg which frequently takes on extra virulence and ends fatally when the above operations are performed at the time of vaccinating.

This very interesting case, bearing upon the foregoing statements, recently occurred in my practice. It is known positively that most southern cattle are permanently infected with the Texas fever parasite—the *Pyrosoma bigeminum* of Smith. They, therefore, may be said to be somewhat in the condition of an animal vaccinated against blackleg, *i. e.*, they have the disease in a clinically unnoticeable form. The animal was a native work-steer, about five years old, in rather poor condition, but apparently healthy. It and two others of the same age and some yearlings had been purchased for fattening, and it was deemed advisable to dehorn them. The operation was performed by the owner with shears without any precaution as to surgical cleanliness. Ten days after I was called to treat the animals. I found the three five-year-olds all apparently sick, one being almost too weak to stand. The temperature was only 99.5. There was considerable nasal catarrh and lachrymation. I removed a foul-smelling plug of raw cotton from the horn stump. There was considerable pus in the cavity, and I picked out several spicules of bone, driven there by the crushing action of the shears. The lining membrane was much reddened and bled easily. The cavity was cleansed, dusted with an antiseptic powder, closed with medicated cotton soaked in tar, and capped with another layer of cotton. The nose was washed out with a warm solution of normal sodium chloride and boracic acid, and the animal given a stimulant hypodermically. As bloating had already occurred, the rumen was tapped, thus relieving the heart and lungs, and an antacid was administered.

Late in the afternoon I was called again, and found the animal dead. A post-mortem examination was made the next day. There were evidences in all organs of a high blood pressure, and a perfect picture of Texas fever. The heart had the usual blood extravasations in its substance, as had also the pericardium. The liver was yellowish from bile stasis. The intestine and kidneys were reddened. The spleen was much enlarged and contained the dark tarry pulp always found in the disease. Cover-glass preparations made from the blood and various organs showed the intracorporeal parasite of Texas fever. There was no ticks on the animals. The other two adult steers seem to have recovered, while the yearlings did not exhibit signs of disease.

I regard the case one of induced Texas fever. In an animal of this age dehorning, while generally considered a minor operation, is one of considerable importance, and undoubtedly makes a serious impression upon the animal economy. More especially, if the animal be a little below par as regards condition, or if a catarrh of the frontal senuses result from the operation, one should not, in the light of existing knowledge upon the subject, be surprised that latent diseases or infections take on new life. Additional cause for the lighting up of the latent Texas fever in these cases was the change from a poor diet to a highly nutritious one, consisting of cassava, velvet beans and shorts.

It has been shown that if southern animals be plunged into insecticidal solutions to rid them of ticks, and then be shipped long distances under adverse conditions, a considerable percentage of them will develop their latent Texas fever into a fatal form of the disease.

GLANDERS has broken out in the stables of the Street Cleaning Department of Brooklyn, and the Board of Health recently destroyed fourteen, and placed nineteen suspects under quarantine.

"YOUR paper is better than ever, and *we all* should try and keep the standard up and improve. 'Nothing succeeds like success.' Now let us help make 1902 better than 1901."—(W. E. French, D. V. S., Daytona, Fla.)

ABORTION IN COWS.

BY PETER MALCOLM, V. S., NEW HAMPTON, IA.

Read before the 14th Annual Meeting of the Iowa State Veterinary Medical Association,
Feb. 11 and 12, 1902.

This question is one of great importance to the veterinarian as well as to the breeder of cattle. Abortion, using the general meaning of the term, is the expulsion of the foetus before it is viable.

The common causes of abortion in cows are external injuries, such as one animal butting another, squeezing through narrow places, slipping and falling, kicks from vicious attendants; in fact, any injury to the abdomen may produce it. Causes of a more obscure nature are internal, such as an abnormal or diseased condition of the uterus; inflammation of the bowels, kidneys, bladder or lungs; indigestion in the acute or chronic form; evolution of gas in the intestines sufficient to cause irritation to the uterus or interfere with its circulation; diarrhoea, whether caused by irritant food or reckless use of purgatives. The presence of a calculus in the kidney, ureter, bladder or urethra may cause a sympathetic disorder of the uterus and expulsion of its contents. Irritant poisons that act on the urinary and generative organs, such as cantharides, savin, tansy, ergot, smut, and various fungi that are found in decomposing vegetable matter. Another cause, and one of great importance, is bad ventilation or any like condition which interferes with the normal oxidation of the blood. The importance of keeping pregnant animals in well ventilated stables can be seen at a glance when you take into consideration the condition of their blood which contains an excess of water and a smaller proportion of albumen and red corpuscles. This condition, aggravated by bad ventilation, decomposed animal and vegetable matter, poor food and stagnant water, is almost sure to result in abortion.

The dam with all her diseases and the accidents that may be forced upon her is not the sole cause of abortion. To the

sire a great deal of this trouble is due, and this should not be lost sight of, as he plays a prominent part in the transmission of disease. In the first place, it is not reasonable to suppose that a sire that is overworked can produce strong and vigorous spermatozoa. When this weakened spermatozoön comes into contact with the ovum, the chemical constituent will be of a debilitated character, which will, if it develops, ultimately cause disease of the foetus or its envelope. Furthermore, this overworked sire is in a condition, on account of the weakened state of his generative organs, which furnishes a favorable field for the development of vigorous microbes, which, when the act of copulation is performed, are carried into the vagina. Together with the spermatozoa these germs enter the uterus and there develop, causing disease of the foetus or its envelope, which may bring about abortion, or, if not, will produce disease of the offspring.

Another cause and one of great importance is infection. In some instances its origin is obscure, but the majority of outbreaks can be traced to neglected cases of simple or accidental abortion. In this form of abortion there is no longer a doubt as to the pathogenic agent, as science has proven beyond a doubt that it is due to a micro-organism. Such conditions exist and we are called upon to treat them. To do this successfully it is necessary to understand the character and pathological action of this organism. It is a pathogenic microbe developed in decomposing animal or vegetable matter. It enters the system by way of the respiratory or digestive tract, the vagina or any abrasion of the skin. Gaining access to the blood it causes putrefactive fermentation, which produces an irritation to the sympathetic system and death to the foetus.

The treatment of this disease, or more properly speaking this deuteropathy, requires tact and energy, as the condition and circumstances that favor its progress are numerous and of an obscure nature. Overlooking a seemingly trivial condition may lead to serious consequences. An essential point to be considered in the preventive treatment is to see that the sire and

dams are in a healthy condition before mating them. The sire should be kept away and not allowed to run with the cows, nor should he be allowed to have intercourse with a cow that has aborted for at least three months or more, and then should be allowed only one service. On no day should he serve more than three cows. The cow that has aborted should not be bred until after the period at which she would have given birth naturally, for in the majority of cases, if an aborting cow become impregnated, she will abort when that period is reached.

In the treatment of a herd for abortion, do not wait to see if it is going to take on the epizoötic form, for delay is dangerous. One neglected case, no matter what the cause is, may cause abortion to every cow in the herd. Therefore, it is very essential to remove the cows that have aborted, thoroughly disinfect them, burn the placenta, destroy the foetus, and all other débris that may have become contaminated with the fluids and disinfect the stable. For disinfection I would advise carbolic acid, as my experience has taught me to believe that carbolic acid is not only a specific in the destruction of this particular microbe, but that it arrests the fermentative changes that favor its development. In using carbolic acid in cases of this nature, two things should be noted: first, that the inhalation of the fumes is necessary inasmuch as they arrest and destroy germs that may have gained access to the air passages; second, that if used too freely it may cause an irritation to the respiratory organs sufficient to produce inflammation of the lungs. A safe formula and one of sufficient strength is one ounce of carbolic acid, one half ounce of glycerine and 16 ounces of warm water applied once a day for four or five days to the floor of the stable and to the rumps and tails of the cows. Internally give in drinking water once a day for three or four days about 4 drams of hyposulphite of soda.

Again allow me to impress upon your mind that the microbes must gain access to the blood before they can do any harm. Also, that the injecting of the vagina is useless and that the irritation thus produced will cause abortion; and

that the success in mastering this disease depends on the sanitary conditions.

DISCUSSION.

Dr. Scott asked Dr. Malcolm if he has by his method ever been able to arrest the disease when once well established in a herd. Dr. Malcolm said that in one herd of 20 cows 19 aborted in one year. He treated the herd, and the owner got a new bull. The next year only a few aborted. In another herd of 15 cows 7 aborted in one year. He treated them, and, although three years have elapsed since, there have been no more abortions. He always has the stables disinfected when the cows are put in in the fall.

A VALUABLE INVENTION.—For years the great mercantile houses have had no end of trouble in keeping up their horse establishments. The trouble arose out of overdriving of the horses chiefly, though many other things entered into the matter. Many merchants have said time and again that they would like to keep more handsome horses and wagons, but it did not pay them, for they could not get drivers on whom they could rely. Now, in New York a perfect tab can be kept and is kept on every driver that goes out from several of the big houses. This is what is known as the "speed and stop check." It is about the size of a small alarm clock and is fastened after the manner of a cyclometer on the rear axle of the rig. On the dial are marked the hours of the day. One large hand goes around this just as in the ordinary clock. Another dial is arranged so that the hand on it only goes when the wheel turns. As soon as the wagon stops that hand stops, and it does not go again until the motion is once more on. In the meantime the time hand keeps moving steadily along. The smaller dial also indicates every quarter mile traveled, marking it off automatically. Thus, by comparing the reading of the two dials the stable boss, on the return of the wagon, can tell how many stops were made, at what rate the horse was driven in each quarter of a mile, and how long the wagon traveled between stops. In that way a driver's trip sheet can be checked off to a nicety and the stable boss can tell just as well as the man who drove how the journey was made.—(*Breeder's Gazette.*)

BARIUM CHLORIDE IN VETERINARY PRACTICE.

By J. C. CALLANDER, V. S., PARKERSBURG, W. VA.

All the veterinary medical works that mention at all the above remedy as a curative agent, say so little about it, and so advise against its use, that I am a little timid in giving my opinion in its favor; but I am such an ardent admirer of the remedy that I cannot withhold a few words that I wish to say in its favor.

Ten-grain tablets of barium chloride are always within my hypodermic case, and I no more think of going to see a case of colic or indigestion without it, than I would go without my hat. I know all about the bad results that have attended its use. I was there myself, and the horse was dead five minutes after I entered the barn, but that was before I knew how to use barium.

In my hands it is far superior to eserine in the majority of cases, though I think there are cases where eserine will give better results, but such cases are greatly in the minority. As is, I think, the fact in ninety per cent. of all cases of colic or indigestion, the feed is the disturbing agency; to evacuate the bowels is to relieve the trouble, whether it be gases or undigested food. This (a 10-gr. dose of barium chloride) injected into the jugular vein, will bring the desired results almost as quickly as I can tell you about it. I sometimes say to my client, that little insignificant dose is guaranteed to cause the bowels to act in five minutes. The first operation is usually inside of three minutes, and then perhaps ten evacuations in less than half an hour. Such results cause the owner to stand in open-mouth wonder. If there is much gas in the posterior bowels it will usually bring it away with a rush. Of course, I am exceedingly careful in using this drug and ascertain that the temperature is not much above normal, and that the heart is reasonably strong. If the horse has been ailing for some time (say from 12 to 24 hours), I do not get as good results from it as I do when I see the patient early in the attack, but in the usual

every-day cases, it gives me very happy results, and often allows me very much sooner to go home to my bed. I think I have gotten many a good hour's sleep—thanks to barium chloride. My client has been better satisfied; more willing to pay my bill, and the poor horse has been saved a long spell of sickness and much pain.

Of course, this is not all my treatment. I use the capsules almost exclusively in the administration of drugs given by way of the mouth. Turpentine is a very valuable remedy, and, like barium, has an advantage in the way of cheapness, which is very desirable. Two ounces of turpentine, to which I add nux vomica fld. ext. and capsicum. I usually throw down the old Barbadoes aloes pill, quite a slow remedy in acute troubles, but it comes along behind and does its work a day or so later.

I started out to tell of barium chloride, but think other remedies all right in their places.

Where the stomach is overloaded with food or gas neither barium nor eserine are indicated. Eserine perhaps would intensify that condition in the stomach, and likely cause rupture of its walls. Barium would not be of any use, as its action is principally on the small and large intestines. All remedies fail sometimes, even when we think indications are good.

I have 10-gr. barium tablets. My hypodermic syringe just holds one drachm. I dissolve the tablets in a teaspoon, draw it into syringe, being very careful to exclude air, having my needles always as aseptic as possible; wet the surface over the vein with alcohol or creolin solution, raise the vein with my finger, insert needle quickly, and inject very slowly, giving fluid time to go into circulation by degrees.

Since I have used that procedure I have had no bad results. I have repeated the dose after half an hour with good results. In some cases there is evidence of considerable pain, but nothing to be compared with the shaking up that the system gets after an injection of eserine.

Hoping that this little talk of mine may cause some that are not using barium to give it a trial, and if they are reasonably

careful they will think much of the remedy. I should have added that in some cases you may miss the vein, but if you do the results will not be as good, and a hardened mass will appear at the point of injection, but this will absorb usually by using some iodine preparation.

A CORRESPONDENT recommends ten-drop doses of pure carbolic acid in half pint of water for indigestion in sheep, claiming that one dose will usually be sufficient, but can be repeated in doses of five drops.

HORSESHOES.—Iron horseshoes permanently fixed to the hoofs were introduced in the fourth century of the Christian era. On the grassy plains of Asia and on the open ground elsewhere shoes were not needed; but the Romans soon found that their paved roads wore the hoof away and often lamed an animal when his service was the most needed, says the *Chicago News*. They could devise no better remedy, however, than leather soles and bags to protect the hoof, though there is reason to believe that they had an iron shoe which they put on and took off at pleasure. Some writers are of the opinion that the later Romans had learned to nail the shoe under the hoof; but it seems possible that the crescent-shaped horseshoe of modern times was first invented in some parts of Asia.

FILIPINO BULL-FIGHTING.—Dr. G. H. Locke, serving in the United States army in the Philippines as chief veterinary surgeon, makes some remarkable statements, in a letter just received, concerning the continued prevalence of bull fights. He declares that he witnessed a scene a few months ago which caused his hair to turn white. It was at a bull fight, Dr. Locke writes, and several natives were killed within an hour. Three were gored to death by the enraged bull, and the spectators applauded the horrible spectacle. Three were killed by being thrown from their horses, each being dragged to death, his foot having caught in the stirrup. While the horse was dragging the unfortunate victim the band struck up a lively air. The last victim of the day was killed by an accident. One of the men threw a javelin at the bull, and it went over the beast and struck a man in the breast. A comrade came dashing by, and seeing the wounded man dismounted, drew a large revolver and beat him on the head until he was relieved by death. Dr. Locke says these exhibitions are given without the knowledge of the chief authorities.—(*N. Y. Herald*, Apr. 6, 1902.)

REPORTS OF CASES.

"Careful observation makes a skillful practitioner, but his skill dies with him. By recording his observations, he adds to the knowledge of his profession, and assists by his fact in building up the solid edifice of pathological science."

TYPHOID FEVER IN A HORSE.*

By L. U. SHIPLEY, D. V. S., Sheldon, Ia,

The subject of this report was a bay gelding, 6 years old, weighing about 1100 lbs., that was bought by a dealer and put on feed to condition him for market. About a week or ten days later our attention was called to the case. The groom stated that he did not eat well. After a casual examination we concluded that it was a case of indigestion, and treated accordingly. However, his condition did not improve. By this time he had begun to show emaciation, eating sparingly of hay and grain at times, and at other times refusing grain entirely and drinking but little water. He was observed to yawn or gap, and to grind the teeth and assumed a position when standing similar to that of a horse about to urinate, seemingly desiring to tense the abdominal muscles. He had a tucked-up appearance of the flanks and was also restless when lying down. The faeces were of natural color, but soft and resembling the faeces of a cow in consistency. Loud borborygmi were constantly present; the temperature ranged about 103° , the pulse about 72, but otherwise normal in character; respiration was normal; visible mucous membranes presented some small petechial spots. Pressure over the abdominal region seemed to cause no perceptible pain. The hair was sleek and glossy throughout the course of the disease. The coat remained about the same except a progressive emaciation, presenting the foregoing symptoms with more or less intensity for some eight weeks, when the symptoms became more alarming and he died the following night.

The next forenoon we made a post-mortem examination and found considerable wine-colored fluid in the abdominal cavity; the peritoneum presented a thickened, softened condition, showing peritonitis to have been the immediate cause of death. Upon removing the small intestines we found the mucous layer much tumefied, as though having been affected by a catarrhal

* Read before the 14th Annual Meeting of the Iowa State Veterinary Medical Association, Feb. 11 and 12, 1902.

inflammation for some time. Peyer's and other lymph glands presented different stages of ulceration, with one or more distinct perforations. The ulcers were distributed throughout the length of the small intestines and varied in size from that of the end of a lead pencil to one inch in diameter, many of them presenting a yellowish-brown scab or slough not yet thrown off. All other digestive organs were normal in appearance.

After having searched all the veterinary text-books at our command we sought some information upon this interesting case from works upon human pathology, and in their treatises on typhoid fever we found the following summary: "An endemic, infectious fever associated with constant lesions of the lymph follicles of the intestines; first, hyperplasia followed by ulceration of the solitary Peyer's and other lymph glands due to the bacillus of Eberth."

The symptoms of the foregoing case: first, the continual presence of fever; second, the peculiar looseness of the bowels; third, the ulceration, perforation and consequent peritonitis are all characteristics of typhoid fever in man. Consequently the application of the title of this report. That the lesions were due to the bacillus of Eberth as in man we have no proof, having made no bacteriological search.

DISCUSSION.

Dr. Repp said, that, inasmuch as eminent investigators are unanimous in the opinion that typhoid fever, as we know it in the human being, does not occur in the domestic animals, he could not adopt the opinion of the author of this report that this was a case of typhoid fever.

OPEN JOINT.*

By J. THOMSEN, V. S., Armstrong, Ia.

About December 1, 1901, a well-bred Percheron mare had, by kicking over a barbed wire fence and becoming fast, received a wound in the anterior part of the tarsal joint. Considerable force had been used by the animal in attempting to free itself until it was finally assisted by its owner. The wound was in a horizontal direction, not over one and one-half inches in length and seemingly not very deep. As there was no perceptible haemorrhage and the mare walked as well as ever when led to the barn, the matter was thought to be of minor importance.

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Upon a neighbor's advice a quantity of dry or air-slaked lime was pressed well into the wound daily. The mare was led a short distance to water twice a day and showed no discomfort whatever for the first four days following injury, but on the morning of the fifth day there was a change. She appeared much distressed, showed partial loss of appetite, and scarcely any weight could be carried on the affected limb. The owner, living at some distance from here, watched this condition for three days and then asked for my assistance. As soon as seen I considered the case quite hopeless. This opinion was due somewhat to previous experience, having seen a number of similar cases. I always had felt justified in advising their destruction, which as a rule would be carried into effect.

There was a profuse flow of synovia from the opening slightly to the inside of the median line, but which on careful examination appeared to extend backwards and inwards, possibly under the lower border of the tendinous slip of the flexor metatarsi which attaches to the cuneiform bone. A portion of the anterior border of the large cuneiform was felt to be devoid of covering and very rough. The animal was in standing posture. The affected limb carried no weight whatever, but the most of the time was held a few inches off the floor and constantly moved backwards and forwards in a dangling manner. She took but very little food, presented an anxious countenance, accelerated breathing, and a tucked-up abdomen. Circulation was considerably disturbed, with some elevation of temperature. The owner would not listen to my advice but insisted on some sort of treatment. A dose of morphia sulphate was given, and later several doses of antifebrin were given at regular intervals. As to the wound treatment I knew of nothing effectual that I had ever employed, but having been impressed favorably with reports on the uses of the salt of silver in similar conditions, I concluded to use it here. Silver citrate in solution of 1-125 was injected into the opening liberally. The exterior of the wound, which had at this time bulged out and become three or four times as wide as it was originally, was well sterilized and dusted over with an antiseptic powder, over which was placed absorbent cotton and a bandage, the latter applied loosely, yet well enough to keep the cotton in place.

Slings were tried, but being objected to by the animal a sort of frame was built around it, having two upright posts 2½ feet apart immediately behind the animal; a cross-piece well wound with cloth was placed between same and about 3 feet or

more from floor. The patient very soon discovered the comfort obtainable from this, for on the second day it rested for hours with its haunches pressed against the beam, finding great support in the contrivance. The wound was dressed regularly every six hours as above described, thus requiring attention during the night. The synovial discharge became perceptibly less on the third and fourth days, and on the seventh day had entirely ceased. The symptoms disappeared gradually and the appetite became excellent. An abscess now formed on the inner aspect of the joint. This was lanced and yielded very quickly to the same treatment. The at first greatly tumefied joint had now become much reduced except around the lower region, where the swelling remained very hot and quite hard. The limb could not at this time carry much weight. The wound healed completely, leaving but a trifling scar. After considerable bathing for several days a blister was applied over both sides of the joint. This seemed to afford considerable relief, as the animal could now commence to use its leg more, and at this date, Feb. 4, 1902, after a second application of a counter-irritant, appears to be making a good recovery.

A COW CASE.*

By G. P. STATTER, V. S., M. D. V., Sioux City, Ia.

I was called at nine A. M. to see a Jersey cow, seven years old, heavy milker when fresh, due to calve in two weeks. At last calving she gave birth to twins. The services of a veterinarian were required to assist delivery, following which, according to the attendant's story, she suffered a mild attack of parturient apoplexy.

The history of the present attack was that she had not been out of the stable for two weeks and had been fed on straw and corn fodder. The night previous she had not seemed well, had refused her feed, was very uneasy, and kept paddling with her hind feet, but finally laid down and seemed easy. I found her down, and if I had not known that she had not calved I would have at once said that it was an attack of parturient apoplexy. She was lying with her head in the flank, and on straightening the neck and releasing it it would return as before; eyes were dull, the mouth open and saliva dripping from it; breathing

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suppressed, with occasional moaning; nothing had passed from the bowels or bladder since the previous day; there was almost complete coma and partial or complete paralysis of deglutition. I carefully gave a capsule containing half a dram of croton oil, which I could feel pass down, and administered stimulants in the same way. I emptied the bladder and rectum, had her braced up on the sternum and well clothed. I left mixture containing nux vomica and ammonium muriate, with instructions to turn over every 4 hours. Calling again at night I could see no change. Relieved bladder and found rectum empty, though the animal had passed nothing. The next morning the patient was still down, but had a free evacuation of the bowels, which was very foetid. There were signs of returning consciousness to the extent that the cow was able to eat and drink a little. About noon she made an effort to get up, and with a little assistance did so. When I called that night I found her still standing and apparently well. She calved within three weeks without any more trouble.

From the history, symptoms and results of treatment what should have been the diagnosis? Ante-partum paralysis, parturient apoplexy, or results of improper treatment?

DISCUSSION.

Dr. Repp said that he was satisfied the case was one of parturient paralysis, although this disease is rare before parturition.

URETHRAL CALCULUS.*

By E. G. MARTEN, M. D. C., Schaller, Iowa.

On an October morning Mr. J. B. Harris brought to me a horse that he said could not urinate. On examination I found the bladder distended with urine and the urine dripping from the penis. On trying to pass the catheter I found it difficult, but finally succeeded. On taking out the catheter some small stones followed, but the big ones remained, and as I could not reach them with my forceps, I decided to operate. It being Sunday Mr. Harris wished me to wait until the next day. The following day I passed the catheter and withdrew the urine and then prepared for the operation. The horse was cast as for castration. The part was washed with castile soap and water and with a 1-20 solution of Pearson's creolin. The skin was

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then rendered tense by the thumb and finger of the left hand and an incision was made with the scalpel in the median line in the perineal region. Then with a large splinter forceps I extracted 25 calculi from the size of a large pea to the size of a large walnut. After washing thoroughly and putting three sutures into the incision in the urethra and one in the skin the animal was allowed to rise. The wound healed nicely and the animal made a complete recovery.

DISCUSSION.

Dr. S. H. Bauman said that on May 28, 1901, a roan mare, about 8 years old, was brought to his barn. The history as given by the owner was that she was unable to hold her urine and that he had owned her for a year or more, during which she worked well every day and was always in good flesh and easily kept. Her coat was always glossy, she had good life and ambition and looked to be in the best of health. Owner told me he had to wash her tail every day or so on account of disagreeable odor of urine. I proceeded to make an examination. I inserted my hand into the vagina and felt a tumor in the bladder as large as my two fists. I inserted a probe but could feel no calculus. I also inserted a pair of lithotomy forceps and probed with them. I then told the owner that all I could do was to cut down on the tumor and find what was encysted and that probably we could effect a cure or better the condition of the mare. With his consent I proceeded to do so. I used creolin solution and thoroughly cleansed the parts. I then took a short castrating knife with hooked blade and made an incision about 4 inches long, starting on a line just anterior to the meatus urinarius and inserted my hand through the opening. I cut down on the tumor and found the calculus encysted. I carefully dissected around the calculus and removed it as well as another smaller one which lay in the same sac. The growth around the calculus was about an inch to an inch and a half thick and resembled superfluous granulations as seen in an open wound. It was very vascular and the hæmorrhage was profuse. I had a loss of perhaps two quarts of blood during the removal. The calculus is almost 11 inches at its greatest circumference, 4 inches at its greatest diameter and weighs almost thirteen ounces. I now exhibit it to you. There are four or five more of the same nature in the bladder of this same mare, but I wanted the mare to live, so stopped with this one. In conclusion will say that I dressed the wound and let the mare stand for an hour.

Her owner drove her home the same day, a distance of ten miles, where she has worked right along ever since. The only difference seen or benefit derived from the operation is that she is able to retain her urine a little longer than before. Probably by the time of our next meeting I will be able to give you more on this same subject, as I expect to operate again this spring.

ANOTHER CASE OF FELINE DIPHTHERIA.

By ROSCOE R. BELL, D.V.S., Brooklyn, N. Y.

Supplementing the report of a case of this disease in a pet house cat, recorded in the REVIEW for May, 1901, I present a copy of the bacteriological findings from a culture made from the throat of a large male cat, to which I was called to remove an imaginary bone which the animal was supposed to have attempted to swallow, and which had become lodged in the pharynx. This was on May 8, and when I examined the throat I found nothing in the nature of a foreign body, but suspecting the true nature of the trouble by the existence of a temperature of 105° F., and the presence of an intense laryngo-pharyngitis, I caused the animal to gag by pressure upon the throat, which resulted in the expulsion of a diphtheritic membrane. This I collected into a clean bottle, and drove around to the office of the Board of Health (a few blocks away), where I made the culture. This was forwarded to the Bacteriological Laboratory, and the next morning I received the following report :

Laboratory No. 1063.

DEPARTMENT OF HEALTH,

DIVISION OF BACTERIOLOGY,

Dr. Bell:

NEW YORK, April 9, 1902.

DEAR SIR :—The examination of the culture made by inoculating the tube with the secretion from the throat of a cat from 46 Livingston Street on April 8 shows the presence of diphtheria bacilli.

Examined by

H. TAYLOR CRONK, M.D.,

Assistant Bacteriologist.

The animal was isolated, but no treatment was prescribed, as it was very difficult to control the beast. He showed very marked improvement, however, the following day, and on April 15 he had apparently entirely recovered spontaneously. I should have stated that the first symptoms of ill-health were observed on the 4th.

I here emphasize the great danger to be feared through this source of contagion. If a child be seized with the disease, a physician is usually summoned and as soon as the diagnosis is confirmed measures are at once adopted to confine the disease to

the patient; but the idea is prevalent that the cat has nine lives and the veterinarian is only called, if at all, when the owner is convinced that only one remains. While the poor animal has been losing eight of his clutches upon existence it has had every opportunity to distribute Loeffler's bacilli to all susceptible subjects. If children are of the household the tender-hearted little playmates of the cat take it in their arms, stroke its hair and talk sympathetically to the sufferer, usually with their faces close to that of the cat. Or, in the absence of such human attention, all other felines in the neighborhood who may make nocturnal visits to the backyard have splendid opportunities to become infected, and thus a perfect epidemic of diphtheria may be started.

It, therefore, behooves the veterinarian, where suspicious symptoms are present, to make or have made a bacteriological investigation.

RUPTURED OESOPHAGUS.

By T. S. CHILDS, V. S., Saratoga Springs, N. Y.

May 20, 1901, I was called to see the trotting mare "Mabel Beck." On my arrival I found a very nice large bay mare, over 16 hands high, eight years old, with this history: Four or five weeks before she was taken with distemper; the owner had by bad advice employed an empiric until a few days before. Then she was sent to a veterinarian to have a very large bunch on her neck opened, which was done all right; but three days later food and water were noticed coming out of the opening. The mare had not eaten anything for several days before the abscess was opened, but since the opening of the abscess she had been eating well until now, and about all the food she took came out of the opening. On examination it was found that a partial rupture of the oesophagus had taken place, about three inches from the pharyngeal portion of the neck. The opening was laterally, downwards and backwards. The opening was about three inches long, taking in the wall, and floor and sides, leaving just enough roof to hold it together. In drinking water it would spurt out of the opening three or four feet. This mare had gone a mile in 2:12 and better, and had no mark, so she was considered very valuable by her owner, Mr. George Cravers, proprietor of the Imperial Hotel in Saratoga, and he wanted all done for her that could be, irrespective of expense. I suggested an operation, but he dissented, so I did not know what to do, but through the kindness of Dr. Williams, of Ithaca, and Dr.

Bell, of Brooklyn, N. Y., and a few others, I decided on a plan of treatment, which worked well. I had all hay and coarse food taken away from her and substituted sawdust for bedding, had her placed in a good clean box stall, gave her milk, eggs, and strained oat-meal—all that she would take for two weeks, and used a $\frac{1}{500}$ solution of nitrate of silver for the external wound, and $\frac{1}{5000}$ per cent. of the same for the internal wound per mouth, four times a day. All went well for a few days, then she would not drink, but we did not let her have anything else. So she soon took to her oat-meal drink, and in three weeks she was well. The first solid food she had in all this time was the first day of the third week (a nice bunch of fresh green grass), which she took eagerly and all right; and, after one more week, we sent her out to grass, where she was left for one month, and at the end of that time she was sent to Island Park, near Albany, to her trainer, who ten days later said she was as good as new and faster than ever. I had almost forgotten to say that the opening was made much larger at first and all the old ragged edges and diseased tissue was dissected away, and the oesophagus (that is, what was left of it) brought as nearly into apposition as possible.

Credit is due to Dr. Bruce McKay, of Glens Falls, N. Y., who I had help me in the operation.

I hope this case will bring out a discussion that will be of a lasting benefit to all; as, only about one year before I had a case that was very similar, and I advised the animal's destruction, which was done, as the owner was willing, and, perhaps, had he been as persistent as our friend, "Mabel Beck's" owner, that the life of this animal might have been saved. This mare's destruction was advised; but the owner would not listen to it, and he saved his mare by his persistence.

A CURIOUS CASE OF TETANUS—TREATMENT WITH ANTI-TOXIN
—RECOVERY.

BY T. B. ROGERS, D. V. S., WOODBURY, N. J.

On February 12th, 1902, I was called to see a horse that had received a wound at the base of the ear five days previously. There was considerable swelling on the side of the face, with infiltration of pus, and entire inability to masticate food.

Suspecting the presence of a foreign body I enlarged the wound and made careful though unsuccessful search for it. I made counter openings for drainage and disinfected the affected region thoroughly.

Next day the conditions were the same and further unsuccessful search was made for the foreign body.

On the 15th I found a splinter of wood about as long and thick as the little finger near the site of the wound *and in a position where careful examination on the preceding day had failed to demonstrate it.* (It had evidently changed its position through some muscular movement.)

On the 17th the wounds were discharging freely and the jaws sufficiently relaxed to allow the patient to eat a little. I may add that I attributed the trouble with the function of mastication to the inflammatory condition in the region of the maxillary articulation. On the 18th a great storm blocked the roads and I was unable to see my patient until the 24th, when his owner came to see me with the statement that the horse was much worse.

I found a case of marked tetanus and at once re-opened and flushed out the wounds. In 48 hours I gave 100 cc. of tetanus antitoxin; this had the effect of rendering the condition stationary, but did not relax the muscles. Continued flushing out of the wound was continued.

After the tenth day of the acute manifestation the symptoms subsided so far as to allow the patient to eat a little grain. Now arose another group of symptoms. Instead of general muscular spasm, one or two muscles of a group were singled out, would remain in contraction for 24-48 hours, then relax and others contract in their stead, and finally the orbicularis oris passed into this condition, remaining so stiff for two days that while the patient could eat if the food was placed in his mouth he was utterly unable to pick it up. The medical treatment consisted in small doses of bromide of potassium, chloral and acetanilid.

The temperature never rose above 102° F. and the heart's action was good and steady throughout the attack.

On the 17th March the patient was dismissed to light work.

I have reported this case because I think it is an instructive one. The patient evidently had tetanus when first seen and the primary amelioration of the symptoms was due to the thorough opening up and disinfection of the wound, its closure permitted further elaboration of toxin and secondary poisoning.

The antitoxin stayed the effect of the toxæmia to a sufficient extent to allow the patient to live until he could elaborate some antitoxin for himself.

CANINE DISTEMPER.

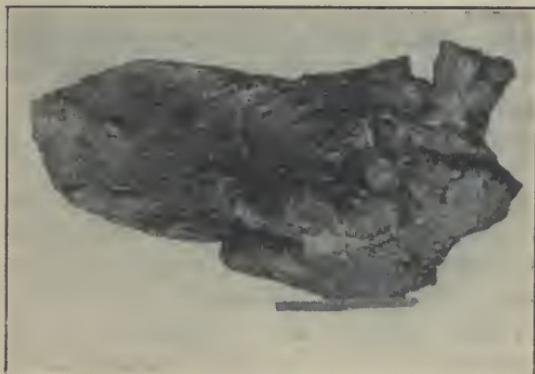
By T. S. CHILDS, V. S., Saratoga Springs, N. Y.

Miss W. bought a dog at the Dog Show of 1900 in New York City ; it was a black cocker ; she has a kennel of 40 dogs ; this new dog had a disease, and all the dogs became affected more or less ; about all dogs appeared to be well or about so, when one after another was taken with what appeared to be infectious pneumonia and about a dozen died or were destroyed, and post-mortem revealed pneumonia in every case. The lungs were black and very much engorged, looking much like the liver. All the dogs suffered terribly. I am stuck as to the cause, and as to infectious pneumonia in dogs, I would be glad to hear from parties having more experience than I on this subject if they can from this meagre description.

[There appears to be no doubt but that the dog purchased at the New York Show journeyed to Saratoga with the germs of a very virulent distemper in his system, and distributed them among his susceptible kennel mates.—EDITOR.]

A RECORD TUBERCULOUS LIVER OF THE OX.

Don C. Ayer, D. V. S., Chief of Meat Inspection, Bureau of



Animal Industry, South Omaha, Neb., contributes the accompanying photo of a beef's liver, which was taken from a steer slaughtered at that station. He furnished the following macroscopical description of the specimen: The carcass was extensively affected with tuber-

culosis. The liver weighed one hundred and forty-seven (147) pounds, was three feet eight inches (3'8") in length, two feet two inches (2'2") in width, and twelve (12") inches thick. The doctor remarks that in his long and extensive experience as a federal meat inspector nothing approaching the dimensions and weight given ever came under his observation.

CASTRATION OF A LION.

By A. M. LEEK, Senior Class N. Y.-A. V. C.

While engaged in conversation with the trainer of "Wallace the terrible, untamable lion," on Fourteenth Street, New York City, one evening last week, he informed me that he had had a lion castrated a few years ago. "He was a masturbator and that is the reason I had it done," continued the controller of beasts. "The operation was performed uptown, and the veterinary surgeon was an Englishman, I think. He did a good job. He wanted me to put a collar on the animal, which I did, and by passing under the collar a strong rope and taking several hitches around his jaws and paws, I fastened him right to the bars of the cage. The doctor then asked me to take another hitch around those paws, for additional safety, which I did. After the operation was over, the way that surgeon sweated was surprising to see, and that lion was wild; he sprang to the side of the cage and clutched the bars opposite to where the doctor was standing (who had got out of the cage safely and was mopping his brow), and myself and two helpers had to get out at once for there wasn't anybody who could stay in the cage with him."

"Didn't it make him more docile?" asked I (referring to the castration).

"No, it didn't seem to," he replied. "He was just as ugly. We put him in with some other lions and he got to fighting and had a hole bitten into his lower jaw through which one of his upper incisors projected (clear through). I had the veterinarian come once more. We secured him and the tooth was cut off, and I intended rounding off the corners (smoothing them) myself, but I had delayed too long, for as soon as the tooth was cut off Mr. Lion keeled over on his back, dead! Blood poisoning having previously set in, causing heart disease, I suppose."

"I LOOK forward with great pleasure for every number of the REVIEW."—(*C. G. Neumann, V. S., Princeton, Minn.*)

GETTING AROUND.—A learned society with headquarters in Stockholm, Sweden, has issued a pronunciamento to the effect that its researches have proved Prof. Koch altogether wrong in his contention that bovine tuberculosis cannot be transmitted to the human subject. As yet the experiments made have not been detailed to the public, but the edict referred to has had some weight with health boards in Europe.—(*Breeder's Gazette.*)

DEPARTMENT OF SURGERY.

By L. A. AND E. MERILLAT,

Chicago Veterinary College, 2537-39 State Street, Chicago, Ill.

SURGICAL TREATMENT OF EXOMPHALOS (REDUCABLE). (*Umbilical Hernia, Omphalocele.*)

By DR. C. O. VAN WINKLE.

Various appliances have been used in the treatment of umbilical hernia, each having its own particular advantage and disadvantage. I will describe a method that I have seen used with very satisfactory results.

I prefer it to the multiple suture, the clamp with the bolt and thumb screw, or the crossed skewers.

This method is especially applicable to the colt, calf and pig. In the equine specie it is advisable to operate on animals thus affected, at the age of from five months to two or three years, six months old being the preferred age.

If the umbilical opening should exceed three and one half inches in length, or the hernia is irreducible, radical herniotomy is advisable.

Preparation.—This consists of seeing to the general health of the patient, and that the bowels are loose.

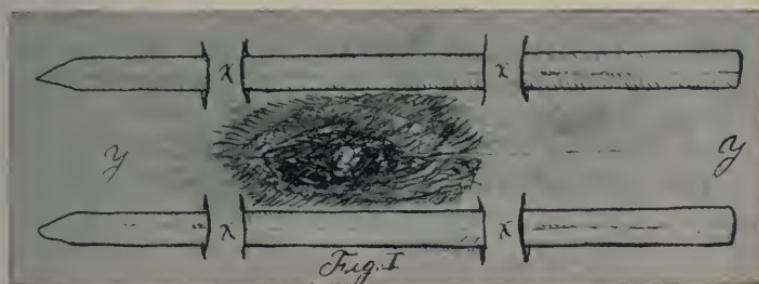
Restrict the rations for thirty hours previous to the operation. It is not best to entirely restrict the food, but supply good nutritious food in small quantities so that the animal may enter the operation in the best of condition.

Instruments.—Razor, scalpel, curved needle, strong suture with braided silk one yard long, two seasoned hickory skewers notched at one end, six to eight inches long (according to the size of hernia) and about $\frac{3}{8}$ inch in diameter.

Technique.—Cast the patient, spread hind limbs, place and retain in the dorsal position (nicely done by placing two bags filled with oats on either side of the animal if sufficient help is not obtainable). Shave the skin around the seat of operation, wash with soap and water, disinfect with sublimate or creolin then a 50 per cent. solution of alcohol. The skin anterior and to the lateral margin of the sac is firmly grasped between the thumb and fingers of the left hand and raised and with the scalpel in the right hand two incisions are made by a sawing motion $\frac{3}{4}$ of an inch apart, horizontal to the linea alba, and large enough to permit of the entrance of the sterilized, oiled skewers.

This is repeated at the opposite anterior margin, also at the posterior lateral margins of the hernial sac.

The skewers are then introduced under the $\frac{3}{4}$ inch of skin on each side of the hernia parallel to the linea alba; thus forming four live stitches from which the circulation is not shut off.



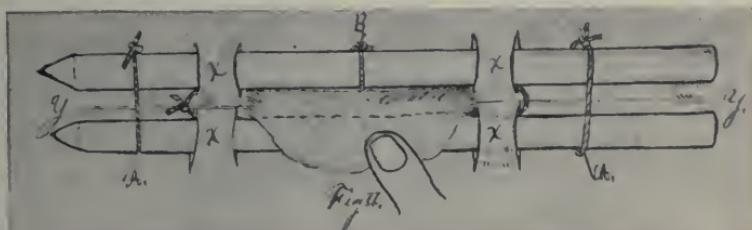
xxxx—Incisions to admit skewers ; yy—linea alba.

A loop of strong suture cord is now placed and tightly tied over the notched ends of the skewers, and the other end is treated in a like manner, while an assistant draws up firmly on the hernial sac, after first having reduced the hernia.

After both ends are securely tied, a strong piece of silk is passed under the skewers in the centre at line B (Fig. 2) and back through the skin above and tightly tied at the side. This forms a stitch in the live tissue which helps to hold the skewers in place.

A suture is now passed along with and beneath the skewers under the live stitches (marked x) and tied at one of the ends.

The sharp ends are now cut off, as is also the hernial sac if it be a large one, otherwise it need not be interfered with. Some carbolized oil is poured around the edges of the sticks and the animal allowed to rise.



H. Hernia ; A.A'—Ligature first applied ; B—Second ligature applied around skewers ; xxxx— $\frac{3}{4}$ inches of skin under which the skewers are placed, also the ligature above same indicated by dotted lines ... ; yy—Linea alba.

After-care.—Tie the animal in a good clean roomy stall provided with plenty of bedding. Keep on short rations until about 10 days after the skewers and hernial sac have sloughed off. Give gentle exercise daily.

Do not turn out with other animals too soon, as running or being chased might cause the new cicatricial tissue to give way.

After sloughing has taken place a dry antiseptic dressing may be applied, as it also may be used during the sloughing period.

Sequelæ.—1. Peritonitis by extension of inflammation

2. Septicæmia by septic infection.

3. Return of hernia by non-closure of umbilical opening.

4. Prolapse of omentum or intestine due to sloughing of the parts too soon, or "violent exertion."

SURGICAL ITEMS.

1. Warts touched up daily with glacial acetic acid will promptly disappear and leave but little scar.

2. Horses that have been idle for a protracted period should never be anaesthetized without first exercising, purging and dieting for several days. The lazy, old, fat horse must especially be anaesthetized cautiously, if at all.

3. In order to guard more carefully against sepsis the knife used to incise the skin should be laid aside and another used in the deeper parts of surgical wounds. The skin of the domestic animals is always dangerous no matter how much scrubbing and disinfection is applied to it. A knife, therefore, is certain to become infected in making the dermal incisions of veterinary operations. Other things being equal, this precaution will add materially to the primary unions in neurotomy.

4. It is well to remember that a spavined horse may sustain a nail prick between the date of diagnosis and the time set for treatment. The importance of re-examining a patient just before operation, no matter how carefully he may have been examined previously, cannot be too frequently reiterated. It is not unusual that an operation on a lame horse is postponed from week to week or from day to day or as long as he is able to work. Suddenly such a patient may become more acutely lame from another cause and be sent to the hospital for the operation that has been recommended, and if the surgeon is not "on the alert" a nail prick may be fired in the hock or a suppurated corn be treated with plantar neurotomy.—(L. A. M.)

"I DO NOT WANT TO MISS A NUMBER OF THE REVIEW."—(I. L. Salley, D. V. S., Skowhegan, Me.)

EXTRACTS FROM EXCHANGES.

FRENCH REVIEW.

By Prof. A. LIAUTARD, M. D., V. M.

FISTULA OF THE NECK—OPERATION—RECOVERY [*P. Bergeron*.]—A roan colt, of two years, became sick with pneumonia, sequela of distemper, of which he recovered, but after a while exhibited the symptoms of a parotid abscess. This was treated, punctured, and the animal lost sight of, when, six months later, the author was again called to see him. He then presented on the right side of the neck, two fistulous openings—one at the place where the abscess had been punctured, back of the parotid and above the union of the roots of the jugular, the other lower down, towards the lower quarter of the neck, forward on the neck, and from which escaped a creamy pus. The two openings communicated by a fistulous tract which crossed the direction of the jugular, and passed underneath it. An injection of fluid colored with permanganate of potassium showed the communication between the two openings, and a long S probe introduced through the lower opening came out at the superior, pushing out a large quantity of purulent matter. The treatment consisted in thorough disinfection of the parts and cautious excision of the fistula with the bistoury, guided by the groove of a probe, introduced into the track. The division was made for a length of 25 centimetres until the jugular was reached. In the remaining upper portion of the fistula a seton was introduced. Injections of permanganate of potassium, alternatively with a solution of sulphate of copper, were pushed through the track, while the lower wound was treated antiseptically with cresyl solutions. The horse was sold afterwards without having any blemish resulting from the operation.—(*Journ. de Zootechnie.*)

TETANUS IN A DOG [*M. Ducourneau and P. Jayles*].—A fox terrier for the last two or three days has difficulty in taking his food, his ears are stiff and drawn towards the summit of the head, his face is wrinkled, the eyes veiled partly with the membra nictitans, the labial commissures are drawn upwards and backwards, the head carried upwards, the neck stiff. The animal moves freely; his functions natural. It is at first a case of facial tetanus. Two days later the disease assumes another

aspect ; it has become generalized. Movements are difficult, the legs move stiffly, the hind ones far apart ; there are muscular contractions under the skin, the tail is rigid, there is ischuria, and no movements of the bowels. The treatment consisted in catheterizing of the bladder, rectal injections, injections of artificial serum (200 c. c.) and 5 c. c. of antitetanic serum, these were given for two days in succession and renewed three days after. Improvement began to show itself on the third day of the treatment, and the patient was discharged on the seventh. This observation is interesting, as, though recovery is generally the rule, it records the history of an important case in which the antitetanic serum used early in hypodermic injections may have had some influence on the result. Although more efficacious as a preventive, its curative properties are then certain or insufficient.—(*Review Veterin.*)

MULTIPLE SUBCUTANEOUS ABSCESES IN A HEIFER [*M. Ch. Besnoit*].—This animal since several months has been under treatment for ulcerated and suppurating tumors of various regions of the body and was brought to the author about January 15. She is in bad condition, eats fairly and ruminates well. Her temperature is normal. She is very thin, with a skin dry, adhering to the tissues underneath ; the coat is dull and staring, the back arched ; in one word, the heifer looks miserable. All the internal organs seem to functionate normally. Her body is covered almost all over with tumors more or less soft and fluctuating in some places. In some, indeed, they are ulcerated on the loins and back ; to the right and to the left there are about ten, spread between the external angle of the ilium and the last rib. On the left, one is as big as a child's head. It seems constituted by a dried caseous tissue. Under it there is a wide granulating surface. In front of that region there are other tumors, smaller, varying between the size of a nut and that of a man's wrist. On the right side there are five or six more. The head is not free from them. On the left side, at the anterior part of the cheek, there is one as big as an egg ; it is fluctuating. On the inferior lip, one is as big as a nut. On the right side near the reflex border of the lower maxillary there is one. In the intermaxillary space, one like a man's wrist ; at the base of the left ear, there are three. The legs are not free either. The right knee is affected, the antero-internal part of left fetlock also. The precrural lymphatic glands are the seat of the same trouble. After excluding the possibility of specific lesions, tuberculous, actynomycotic, botryomycotic, cancerous, etc., a di-

agnosis was made of abscesses, and the animal treated accordingly. Removal of the caseous crusts which covered some of the tumors, cresyl dressings or antiseptic and absorbing applications to the surface underneath, punctures of all the fluctuating tumors with antiseptics afterwards, and little by little the recovery progressed and was completed after a length of time which lasted up to the end of April, over three months.—(*Revue Veter.*)

MASSETERINE MYOSIS IN COLTS ONE YEAR OLD [*M. J. N. Ries*].—This record is very interesting, notwithstanding its incompleteness, as it reveals a peculiar morbid entity which may have been observed by others. It is the history of four colts, between 10 and 13 months old, which all died within a few days of sickness and after presenting a similarity of symptoms very particular, if one take in consideration that the disease has appeared in four different stables, where only one of those animals was kept, on four different neighboring farms having but one point of community, viz.: the probable existence of an underground source of water supplying the drinking places. With the four colts the disease was "essentially characterized by an acute masseterine myositis, producing from the start trismus and almost absolute impossibility of taking or masticating solids and liquids, and followed later on by atrophy and contractions of the masseters. The disease has always ended fatally." The first colt was sick eight days and died the ninth. The second died in four days. The third had a complication of pneumonia by foreign bodies, which remained limited, from which the animal seemed to improve and ultimately died in 19 days. The fourth seemed to have resisted 48 hours.—(*Rec. de Med. Vet.*)

OSSIFIED ADENOMAS OF THE CÆCUM IN A HORSE [*N. G. Petit*].—A horse died from intestinal obstruction. Affected with colics without tympanitis, he suffered for four days, notwithstanding severe treatment. Aged 25 years, he had for the last two years been affected with colic on several occasions. At the post mortem most curious lesions were found, which have never been observed, either in man or animals. They consisted in conglomerated tumors, forming a mass as big as the wrist, divided on its surface as papillomas are and situated on the mucous membrane of the cross of the cæcum. In passing the finger over the vegetations of the growth, a sensation of roughness and hardness is felt, similar to that given when examining tissue affected with calcareous infiltration. The histological ex-

amination showed that this growth was constituted by ossified adenoma.—(*Bull. de la Soc. Cent.*)

A PERNICIOUS ACCESS IN A SLUT [*McBlot*].—Was it pernicious access of fever similar to those which attack man and are manifestations of paludism, or what? At any rate, the slut subject of this record had been at Combunton for something like a year when one day she was found lying down, panting, sleepy, with the skin very hot. Her temperature was 39.8° C. She refused all kinds of food. It was not a case of isolation, as she never went out except very early in the morning or late after sundown. Paludean fever is diagnosed. 50 centigrams of quinine are given. The next day her temperature went up to 39.1° C. Same dose of quinine, which lowered it to 38.8° C. There was great prostration, inability to stand. The day after the thermometer registered 39.8° C., respiration 42, pulse 121. 80 centigrams of quinine were given. At 4 o'clock the temperature was up to 40.3°. The animal was taken with epileptic symptoms; she had convulsions, and struggled so that it took three men to control her. 50 centigrams of chlohydate of quinine were given subcutaneously, and she was wrapped in a cold sheet. After an hour the thermometer registered 38.1°. She was quiet. The cold sheet was removed, the animal rubbed dry and wrapped in a dry blanket. In the evening, another injection of quinine. Temperature went down to 37° C. After a good night's sleep, it still went lower to 36.8°, and the dog began to drink by herself. From that day recovery accentuated itself more and more, leaving, however, two complications, due probably to the enormous doses of quinine given. She was deaf and had amblyopia. She recovered rapidly of the first, but the second seemed rather rebellious in passing away. Unfortunately there had been no examination of the blood with the microscope and on that account the positive correctness of the diagnosis remains doubtful.—(*Rec. de Med. Vet.*)

CARDIAC HYPERSTROPHY—RUPTURE OF THE POSTERIOR VENA CAVA—CYST OF THE OVARY [*M. Roger*].—This case is interesting by the variety of the lesions. An old mare, tied up with her halter, pulls back, makes a somersault, and falls heavily on the pavement. She tries to get up, but is unable to. When down the buccal mucous membrane is livid in color, the pulse filiform, the respiration stertorous. She soon enters into delirium, struggles violently; in twenty minutes she dies. At the post-mortem the right wing of the atlas is found to be fractured, the meninges and the brain are intact. On opening the

abdomen a large quantity of blood escapes, some 15 litres, and the abdominal organs are bloodless. Those organs present nothing particular. The right ovary has a large cyst; it weighs 750 grammes. The aorta has no aneurism, no solution of continuity. The walls of the posterior vena cava are exceedingly thin and its calibre depressed. At 10 centimetres from its origin the calibre is twice its normal size, its walls are highly colored red. In front of the dilatation, running towards the heart, there is an oval tear measuring 3 centimetres in length and 2 in diameter. This tear has its edges congested; they are anterior to death. The heart is considerably hypertrophied; there is hydropericarditis. Nothing in the lungs.—(*Revue Veterin.*)

BELGIAN REVIEW.

By Prof. A LIAUTARD, M. D. V. M.

FRACTURE OF THE POSTERIOR CANNON BONE IN A HORSE—RECOVERY [*Prof Navez*].—The prognosis of fractures of a hind leg varies according to circumstances, but most writers agree that in the majority of cases it is better to have the animal destroyed rather than to run the chances of a costly and always uncertain treatment. For those reasons records of such accidents are comparatively few, although they are rather frequent. The case recorded by the author shows that, after all, the prognosis is not always so very serious; that some complete fractures in the horse may recover rapidly, and that the use of leather splints is very advantageous. A horse cast in the stable was found very lame in one hind leg, with fracture of the metatarsal, a simple fracture, transversal outwards and beveled in its internal half. Treatment being required by the owner, the fracture was reduced, the leg enveloped in wadding and plaster of paris held in place with rollers and with three leather splints, half a centimeter thick, which had been softened by dipping in warm water. Rollers with plaster of paris were then laid over the whole, extending from the pastern to the upper part of the cannon. The horse was placed in slings. Six days after the animal rested on his broken leg; on the 10th day he stood firm on it; on the fifth week he took moderate exercise, scarcely limping on his lame leg. After fifteen days he resumed slow work.—(*Annales de Bruxelles*, Jan., 1902.)

VERTEBRAL ACTINOMYCOSIS IN A COW [Mr. Poes].—Nervous manifestations in the diagnosis of bovine tuberculosis have already been recorded. It is to show that such can also be present in lesions of a different nature that the author records the following case:—A three-year-old cow, in good condition, has become dull, her legs are stiff, and she moves unwillingly. After a while she becomes agitated, has spells of coughing, her general functions are about normal. She carries her head high, abnormally extended; superior cervical muscles are hard; lateral movements of the head, or those of flexion, are stiff; prehension of food from the ground is difficult; there are spasms of the extensor muscles of the head; the front legs are stiff; the hind ones act normally. Is it rheumatism, tetanus, or meningeal tuberculosis? Treatment is prescribed, but no improvement follows. The animal is slaughtered. At the post-mortem the body of the sixth cervical vertebra is found pierced from its superior to its inferior face by a canal which is filled with a tumor. This by its internal extremity spreads on the floor of the rachidian canal, between it and the dura mater, extending to the two next vertebrae, and by the inferior extremity rests on the bone and the longus colli. The tumor is surrounded by a kind of fibrous membrane, greyish or blueish, soft here, harder there, and showing numerous very small yellow granulations, which under the microscope prove to be colonies of actinomycetes.—(*Annales de Bruxelles*, Feb. 1902.)

SPRAIN OF THE SHOULDER IN BOVINES [Mr. L. Henze].—This affection is quite frequent, and, while it has been observed frequently as a complication of tuberculosis, it results also quite often from mechanical cause, as the author has observed it in districts where animals are turned in numbers to pasture. When an animal in heat is among them, various accidents are often met with, such as digestive troubles, reduction in lactation, cerebral congestion, and, above all, sprain of the shoulder, which is due to the struggles of a cow resisting another which tries to mount her. There is nothing peculiar in the symptomatology, and the prognosis is generally favorable. The essential condition of the treatment is rest, and this must be reinforced by the attendant. Good bedding, astringent or mildly irritating frictions are necessary. Subcutaneous injections of salted water will do in old cases. Improvement will not be noticed before three weeks, but radical recovery is obtained after a month.—(*Annales de Bruxelles*.)

FRACTURE OF THE HIND PASTERN IN A HEAVY DRAUGHT

HORSE [Mr. J. Nizet].—This is an eight-year-old mare, which in starting a load, slipped back on her right hind foot and became suddenly so lame that she had to be taken home. A simple transversal fracture of the first pastern complicated with slight wound of the coronet is the diagnosis. By request of the owner treatment is undertaken. Placed in slings, the animal had its leg, from the hoof to the middle of the cannon, wrapped up in the classical plaster dressing; the other leg is covered with astringent compresses to prevent laminitis; the slings are removed at night to allow the horse to lay down. For seven weeks the animal moved only on three legs, and after two months, when the bandage was removed, it was noticed that the pastern was surrounded with a swelling of fibrous consistency, which interfered with the action of the leg, and probably caused pain by pressure on the nerves of that region. Alterative applications being used, the swelling was reduced, but the lameness remained the same, viz., inability to carry weight while in motion or even when standing still. High plantar neurotomy was then resorted to on both sides of the diseased leg and two weeks later the mare was able to do light work. She recovered entirely with time and did even hard work.—(*Annales de Bruxelles, March, 1902.*)

GERMANY'S NEW MEAT LAW.—*Washington, March 31.*—“It is officially announced in the *Reichblatt* that Paragraph 21 of the new law regulating the inspection of cattle intended for slaughter and the inspection of meat will go in force on Oct. 1, 1902, says United States Consul Albert at Brunswick in a report to the State Department. In explanation of this paragraph he says: ‘It provides that no substances or processes of any kind shall be applied to the preparation of meat intended for sale which shall make it injurious to health. The importation of such prepared meat from a foreign country is forbidden, and no traffic in it is permitted. The chemical substances which are considered deleterious are: Boracic acid and its salts, formaldehyde, alkali hydroxides or carbonates, sulphuric acid and its salts, as well as hyposulphites, fluor acid and its salts, salicylic acid and its combinations and chloric acid salts. These provisions of the law also apply to the use of coloring stuffs for meats and meat products. However, the yellow coloring of margarine and the colors applied to the coverings of sausages are excepted.’”

“I APPRECIATE all improvement and scientific advancement in the REVIEW.”—(*J. R. Kelso, M. D. C., Hebron, Ill.*)

COLLEGE COMMENCEMENTS.

M'GILL UNIVERSITY. FACULTY OF COMPARATIVE MEDICINE.

The annual convocation for the conferring of degrees was held March 27 in the old library, with Dr. Craik in the chair, Sir William Macdonald representing the governors, and Principal Peterson was there as Vice-Chancellor. Dean McEachran read the report, and the prizes were presented as follows : Medal for best general examination during the three-year course, A. D. Harrington ; prizes, veterinary medicine and surgery, A. R. Douglas ; cattle pathology, A. D. Harrington ; *materia medica*, A. D. Harrington ; anatomy, T. C. Hays. Extra prizes for the best essay read before the veterinary medical association, (1) A. D. Harrington, (2) A. R. Douglas, (3) W. R. Blair ; for the best essay read before the psychological society, (1) A. D. Harrington, (2) F. M. Gray.

The candidates for the degree of D. V. S. were then capped by Principal Peterson as Vice-Chancellor. They were : W. Reid Blair, G. A. Kennedy, W. H. Spear, Alexander R. Douglas, Seymour Hadwen, J. W. Symes, A. D. Harrington, W. Manchester (*in absentia*).

Dr. A. R. Douglas read the class valedictory, in which he dwelt on their gratitude for the zealous and conspicuously able instruction of the professors, and urged the difficulties, the responsibilities and importance of the veterinary calling.

Dr. McEachran wished the students God-speed, saying no school in the Dominion had turned out so many leading veterinarians as the McGill faculty, hampered in many ways as it is. He urged the great importance of the science. When individual horses are valued at \$100,000, and cattle at \$15,000, and dogs at \$10,000, the need of trained veterinary doctors is apparent. In the United States there are \$2,000,000,000 invested in stock and an annual loss of \$20,000,000 from hog cholera alone. Moreover, the welfare of agriculture and the public food supply depends largely upon them. He went on to deal with the growing recognition of the science in the American colleges and pointed out the necessity of endowments for the carrying on of what is only one branch of the great science of medicine. The provincial legislature had at last recognized them by passing an act to regulate the right to assume the title and to practice.

Dr. Peterson expressed his sympathy with the work of the faculty, saying that at the University of Pennsylvania the effi-

cience of the veterinary faculty is continually rising, and he was extremely pleased at the decision of Harvard to take up their work in comparative medicine again with some of the endowments lately given them for the study of medicine. He concluded with a few words of commendation of the work done by the students and professors.

Dr. Craik said it had been one of his first duties as dean of the faculty of medicine to assist in the incorporation of the veterinary school in the university. He would remind them that his own faculty had struggled along for years before reaching its present position of stability, and he believed their sun of prosperity would soon rise.

M'KILLIP VETERINARY COLLEGE.

A new era was inaugurated at the sixth annual commencement exercises of this college. The growth of the institution rendered it necessary to obtain a larger hall than in former years to accommodate the guests; in consequence the exercises were held at the auditorium of Y. M. C. A. building, Chicago, March 28th, at 7.30 P. M. The exercises were opened by the Rev. Pleasant Hunter, D.D., after which followed the conferring of the degree of the College (M. D. V.), by Dr. M. H. McKillip, upon the following gentlemen: C. P. Draper, A. H. Fehr, Robt. Frame, Chas. Frazier, T. P. Galbraith, H. L. Jackson, Geo. Jerome, John Keppel, C. A. Mack, S. H. Miller, C. W. Moore, M. W. Shempf, J. F. Sylvester, B. C. Tillman, Thomas Trinder, F. R. Whipple, T. T. Kendrew, J. P. Luxmore, H. A. Walker.

The address of the evening was deliverd by Dr. Jas. G. Kiernan, and prizes were awarded by the Secretary, Dr. John J. Millar, as follows: Highest average for three years, John Keppel (presented by McKillip Veterinary College); highest average for senior year, John Keppel (presented by faculty of McKillip Veterinary College); highest average for junior year, W. G. Langley (presented by faculty); highest average for freshman year, E. D. Andersen (presented by faculty); highest average in bacteriology, John Keppel (presented by Prof. I. D. Rawlings); highest average in anatomy (freshmen), A. Paul (presented by Prof. F. S. Schoenleber); highest average in *materia medica*, M. W. Schultz (presented by Prof. T. B. Newby).

Following the exercises about 150 persons adjourned to the banqueting hall, where a most elaborate *menu* was given in

honor of the class of 1902. Toastmaster Prof. E. M. Reading contributed greatly to the success of the evening's entertainment, while the responses were made by Dr. Howard L. Jackson for the graduating class, W. G. Langley of the senior class, and J. W. Eastland of the junior class. The different members of the faculty as they were respectively called upon by the toastmaster responded briefly, as also did Rev. Pleasant Hunter. A very regretable feature was the absence from the banqueting table of Dr. McKillip, who on account of his recent severe illness deemed it advisable not to remain after the graduating exercises.

It is needless to add that the final exercises of the class of 1902 mark an innovation in the history of the McKillip Veterinary College.

ONTARIO VETERINARY COLLEGE.

The closing exercises of this college were held March 28, and the following gentlemen received the degree of V. S.:

F. Rudolph Adams, Cardiff, Wales; Fred. W. Anderson, Buffalo, N. Y.; Henry M. Armour, Warsaw, N. Y.; Harry K. Berry, Paterson, N. J.; Thomas A. Blacklock, Campbellville; Christopher J. Bousfield, Toronto; Phineas Bridge, Paterson, N. J.; Walter T. Brophy, Montevideo, Minn.; Jared Burton, Wheaton, Minn.; Gilbert F. Candage, Bluehill, Me.; Joseph E. Carter, Riverhead, Long Island, N. Y.; Nels A. Christianson, Magnolia, Minn.; Matthew G. Connolly, Sundridge; Clarence J. Cooper, Warwick, Bermuda, W. I.; Thomas F. Colling, Toronto; James Morgan Dand, Deloraine, Man.; John B. Darling, South Peacham, Vt.; Charles E. Dille, Ville Ridge, Ill.; Charles H. Doyle, Summerside, P. E. I.; Lawrence L. Doyle, Summerside, P. E. I.; Bert C. Eldredge, Tedrow, O.; D. Alex. Fasken, Paris; Edward Roy Farewell, Drayton; W. Francis Forest, Hicksville, O.; Ralph Edward Freeman, Rockland, Me.; William A. Gill, Verschoyle; G. Arthur Gohn, Toronto; Charles L. Hayward, Georgetown, Ill.; Demerest T. Havens, Manasquan, N. J.; George A. Harvey, Cleveland, Ohio; Joseph S. Hollingsworth, La Salle, Ill.; Robert A. Hume, Watford; Gardiner Harvey, Guelph; Wesley I. Irwin, Little Britain; James W. Jackson, Ventnor; T. Fred. Johnston, St. John, N. B.; T. F. Kimball, Elmore, O.; John T. Leslie, Flora, Ind.; W. D. MacCorinack, Enterprise; Jas. A. McLeish, Arkona; Edward J. Magee, Warrenburgh, N. Y.; Milton M. Marshall, Cochranton, Pa.; Walter L. Mills, Warsaw, N. Y.; John P.

Molloy, Rosser, Man. ; H. Clifford Murray, South Glen Falls, N. Y. ; William J. Neil, Omemee ; R. C. M. Nyblett, Strathclair, Man. ; Francis Vincent Perry, Regina, N. W. T. ; Clarence Clement Petty, Hastings, Mich. ; John Harland Pickering, Forest ; Charles Edgar Poe, Leitersburg, Md. ; Frank W. Powell, Akron, O. ; Charles R. Query, Jackson, Mo. ; Shearman Ransom, Westholm, B. C. ; Herbert E. Rea, St. Mary's ; W. E. E. Robbins, Halifax, N. S. ; George L. Schneider, Canton, O. ; Omar O. Selle, Cameron, Mo. ; J. Clarence Singer, Perth Amboy, N. J. ; Llewellyn Snyder, Huntsville ; Chauncey C. Stevens, Yale, Mich. ; A. Newton Stewart, Waterloo, Iowa ; Clark A. Stewart, Waterloo, Ia. ; Robert Stewart, St. John's, Nfld. ; Theodore J. Stover, Norwich ; John Henry Sturin, Chilton, Wis. ; Lorne Daniel Swenerton, Carberry, Man. ; William F. Schwiesow, Columbus, Wis. ; Arthur R. Torrie, Chatsworth ; R. Thomas Williams, Blackinton, Mass. ; W. C. Van Allstyne, Red Creek, N. Y.

GRAND RAPIDS VETERINARY COLLEGE.

At the fifth annual commencement exercises, which took place in the college auditorium March 28, the following received diplomas : A. Beck, Auburn, Iowa ; F. Brouwer, Holland, Mich. ; E. Boesewetter, West Bend, Wis. ; E. Branyan, Bronson, Mich. ; H. J. Getman, Traverse City, Mich. ; George Rainy Gaggin, Australia ; C. E. Greenewalt, Topeka, Ind. ; James F. Hanley, Boston, Mass. ; W. A. Haynes, Jackson, Mich. ; A. G. Hersey, Grand Rapids, Mich. ; E. L. Krieger, Benton Harbor, Mich. ; F. S. Kinison, Dawson, Pa. ; W. G. V. Lyons, South Norwalk, Conn. ; Elmer D. Nash, Helena, Montana ; M. L. Pattison, Ridgeway, Mich. ; Herman F. Sass, Toledo, Ohio ; E. J. Sowerby, Rockford, Mich. ; Fred L. Small, Beulah, Mich. ; J. F. Sudman, Boyne City, Mich. ; A. R. Trickel, Brownstown, Wis. ; Harry W. Wise, Rife, Pa. ; Joseph Wardle, Flint, Mich. ; W. W. Sainmis, Indianapolis, Ind.

Dr. W. A. Mclean, of Greenville, took a post-graduate course ; Dr. W. E. Bessey, of Grand Rapids, and Dr. J. E. Jaynes, of DeWitt, Mich., received the honorary degree of doctor of veterinary science.

The success of the college being now assured, the management are about to construct a more modern building for the accommodation of its patrons.

"I HAVE taken the REVIEW so long that I find that I am lost without it."—(J. M. Everitt, V. S., Hackettstown, N. J.)

NEW JERSEY'S NEW LAW.

AN ACT TO REGULATE THE PRACTICE OF VETERINARY MEDICINE, SURGERY AND DENTISTRY IN THE STATE OF NEW JERSEY, TO LICENSE VETERINARIANS AND TO PUNISH PERSONS VIOLATING THE PROVISIONS THEREOF.

Be it enacted by the Senate and General Assembly of the State of New Jersey:

1. The governor shall appoint a board of examiners to be known as the state board of veterinary medical examiners, said board to consist of five members, who shall be persons of recognized professional ability and honor in the veterinary profession in this state and who shall have practiced veterinary medicine and surgery for at least five years immediately preceding such appointment; the term of office of the members of said board shall be three years, or until their successors are appointed and duly qualified; *provided, however,* that the members of the board first appointed shall serve as follows: One, for one year, two, for two years, and two for the full term of three years, commencing on the first Monday of May, one thousand nine hundred and two; and thereafter each member shall be appointed for the term of three years; each appointee shall, before assuming the duties of the office, and within thirty days after the receipt of his commission, take, subscribe and file, in the office of the secretary of state, the oath or affirmation of office; the governor shall fill vacancies from death or otherwise for unexpired terms, and may remove any member of said board for continued neglect of the duties required by this act, for incompetence, unprofessional or dishonorable conduct.

2. The first meeting of the examining board shall be held on the first Monday in May, one thousand nine hundred and two, suitable notice in the usual form being given with the notice of their appointment by the secretary of state, to each of the members thereof specifying the time and place of said first meeting; at the first meeting of the board an organization shall be effected by the election from their own membership, of a president, a secretary and a treasurer; it shall have a common seal, and its president shall be empowered to issue subpoenas and to administer oaths in taking testimony in any matter pertaining to the duties of said board; it shall make and adopt all necessary rules, regulations and by-laws not inconsistent with

the laws of this state or of the United States, whereby to perform the duties and to transact the business required under the provisions of this act.

3. Said board shall hold two or more meetings for examinations at the capitol building of this state each year, due notice of which shall be made public at such time as they shall determine; at all meetings a majority of the members of the board shall constitute a quorum, but the examination of applicants for license may be conducted by a committee of one or more members duly authorized by said board; said board shall examine all diplomas as to their genuineness, and each applicant for a license shall submit to a theoretical and practical examination, said examination to be written, oral, or both; such examination shall include the following subjects: Veterinary anatomy, physiology, chemistry, surgery, dentistry, practice of veterinary medicine, obstetrics, pathology, bacteriology, diagnosis, materia medica, therapeutics, pharmacy, zootechnics, sanitary medicine, hygiene, meat and milk inspection, and veterinary jurisprudence.

4. Said board shall issue forthwith to each applicant who has passed such examination successfully, and who shall have been adjudged duly qualified for the practice of veterinary medicine, surgery and dentistry, a license to practice the same in the state of New Jersey; such license issued pursuant to this act shall be subscribed by the president and secretary of the board of veterinary medical examiners; it also shall have affixed to it, by the person authorized to affix the same, its corporate seal; before said license shall be issued it shall be recorded in a book kept in the office which said board shall establish for the purpose of carrying out the provisions of this act, and the number of the book and the page therein containing said recorded copy shall be noted on the face of said license; such records shall be open to public inspection with proper restrictions as to their preservation.

5. Upon presenting to the board a certified copy of a court record, showing that a practitioner of veterinary medicine, surgery or dentistry has been convicted of a felony or misdemeanor, that fact may be noted upon the record of licenses, and the license and registration shall be marked canceled; any person whose license shall be so canceled shall be deemed as an unlicensed person, and, as such, subject to the penalties prescribed for other unlicensed persons who practice veterinary medicine, surgery or dentistry in this state.

6. From and after the first Monday in May, one thousand nine hundred and two, any person not hereinbefore registered to practice veterinary medicine, surgery and dentistry in this state, or desiring to enter upon such practice, shall deliver to the secretary of the veterinary medical board, upon a payment of a fee of ten dollars, a written application for license, together with satisfactory proof that the applicant is more than twenty-one years of age, is of good moral character, has obtained a competent school education and has received a diploma conferring the degree of veterinary medicine from some legally incorporated veterinary college or university of the United States, or a diploma or license conferring the full right to practice all the branches of veterinary science in some foreign country (which, in the opinion of said board, was in good standing at the time of issuing said diploma); applicants who shall have received their degree in veterinary medicine after the first Monday of May, one thousand nine hundred and two, must have pursued the study of veterinary medicine for at least three years including three regular courses of lectures of at least six months each in different years, in some legally incorporated veterinary college or university, prior to the granting of said diploma or foreign license, such proof shall be made, if required, upon affidavits; upon making the said payment and exhibiting the before-named proof, the examining board, if satisfied with the same, shall issue to such applicant an order for examination; in case of failure at such examination, the candidate, after the expiration of six months and within two years, shall have the privilege of a second examination by the board of veterinary medical examiners, without the payment of an additional fee; and it is further provided, that applicants examined and licensed by the state board of veterinary medical examiners of other states, on payment of a fee of ten dollars to the examining board of this state, and on filing in the office of said board a copy of said license, certified by the affidavit of the president or secretary of the board of such other state, showing also that the standard of the examination and other requirements adopted by that state board of veterinary medical examiners is substantially the same as that provided for by this act, shall without further examination, receive a license conferring upon the holder thereof all the rights and privileges provided by sections four and six of this act.

7. From and after the first Monday in May, one thousand nine hundred and two, no person shall enter upon or continue the practice of veterinary medicine, surgery or dentistry in any

of their branches in the state of New Jersey, unless he has complied with the provisions of this act, and shall have exhibited to the clerk of the county in which he desires to practice veterinary medicine, surgery or dentistry, a license duly granted to him as hereinbefore provided ; whereupon he shall be entitled, upon the payment of one dollar, to be duly registered in the office of the clerk of the court of common pleas in said county ; any person using any title or degree appertaining to the veterinary profession or practicing veterinary medicine, surgery or dentistry in any of their branches in this state after the first Monday in May, one thousand nine hundred and two, without being licensed and registered in conformity with the provisions of this act, or otherwise violating any of its provisions, shall be guilty of misdemeanor and, upon conviction thereof, shall be punished for the offense by a fine not less than one hundred dollars, or by imprisonment in the county jail for a period of not less than thirty days, or by both fine and imprisonment, and for each subsequent offense the punishment shall be double that of the preceding one ; and it shall be the duty of the respective district attorneys of the counties of this state to prosecute violations of the provisions of this act.

8. It shall also be lawful for the said board to institute civil proceedings in any court of competent jurisdiction against any person, company or association for the violation of any of the provisions of this act ; such proceedings shall be brought in an action on contract and, upon conviction thereunder, the person, company or association so convicted shall be liable to a fine, which shall be the same amount fixed in preceding section of this act, and all fines and penalties collected by any court under the provisions of this section of this act shall be paid over to the treasurer of this board, to be received and disbursed by him in accordance with the provisions of this act.

9. Nothing in this act shall be construed to interfere with or punish veterinarians in the United States army, or in the United States bureau of animal industry, while so commissioned, or any lawfully qualified veterinarian residing in other states or countries meeting registered veterinarians of this state in consultation, or any veterinarian residing on the border of a neighboring state and duly authorized under the laws thereof to practice veterinary medicine or surgery therein whose practice extends into the limits of this state ; *provided*, that such practitioner shall not open any office or appoint a place to meet patients or receive calls within the limits of New Jersey ; and

nothing in this act shall be construed to prohibit the practice of veterinary medicine, surgery or dentistry, by any practitioner who shall have been registered in any county in this state before the first Monday in May, one thousand nine hundred and two, and one such registry shall be sufficient warrant to practice veterinary medicine, surgery or dentistry in any county in this state; nothing in this act shall apply to persons gratuitously treating animals in cases of emergency; *provided*, they do not represent themselves to be veterinarians or use any title or degree appertaining to the practice thereof.

10. The expenses of said board and of the examinations shall be paid from the license fees and fines above provided for, and if any surplus remain, the same may be distributed among the members of said board as a compensation for their services as members, but otherwise they shall receive no compensation whatever.

11. All acts or parts of acts, general or special, now existing not in accordance with the provisions of this act or inconsistent herewith be and the same are hereby repealed.

12. This act shall take effect immediately.

THE ROCKER OPERATING TABLE.

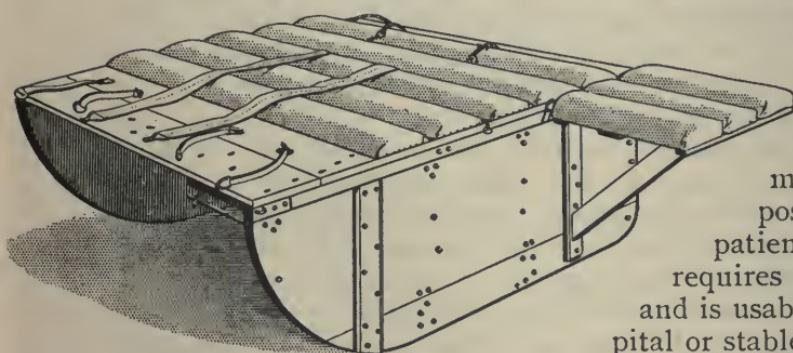
The operating table here illustrated has been in use now for more than a year at the Kansas City Veterinary College, and has proven so satisfactory in every way that we have obtained from Dr. Stewart a photo and description of it for the benefit of our readers.

This cut shows the table without the foot-board, which is

removed when the animal is on the table. This table is easily moved into any position with the patient upon it. It requires no anchorage and is usable in any hospital or stable.

The table can be man-

ufactured and placed on board cars in Kansas City complete in every detail for \$75. Should any member of the profession desire to construct one at home, blue prints giving every item of construction, so that a competent mechanic can readily build it, can be furnished for \$5.



CORRESPONDENCE.

THE BUYING OF AMERICAN HORSES BY THE BRITISH GOVERNMENT.

FORT SHERIDAN, ILL., April 10, 1902.

Editors American Veterinary Review :

DEAR SIRS :—The press of the country for several weeks past has been full of the abuse of the alleged blunders of the British remount department in their purchase of horses in this country for service in South Africa, how they were swindled by the contractors, high prices paid, 'id worst of all their refusal to accept the services of the U. S. Army "horse expert," who, it is presumed, kindly offered his services at so much per —.

As we know a good deal about the operations of some of the British boards doing business in the Northwest, we believe it is only fair to our English brethren to state a few facts in this connection.

In the first place, there is no such office as that of "horse expert" in the U. S. Army ; the horses are mostly purchased here under contract by an officer of the Quartermaster's Department and in a few instances by cavalry regimental boards of one or two officers ; in either case the inspecting officer or officers is accompanied by a regimental veterinarian or a civil veterinarian of the Quartermaster's Department, and we know that none of the gentlemen claim to be "horse sharps," and we are sure, that the veterinarians do not claim to know any more about the soundness of an animal than their English brother. So much for the "horse expert."

While acting as a member of a horse board last spring and summer, receiving horses under contract for a cavalry regiment, we met on several occasions British horse boards operating in the same territory and receiving small sized horses for use in South Africa, while we were in the vicinity of Sheridan, Wyoming. About forty car loads of these horses were shipped south for transportation to Cape Colony. We were interested to a great extent in the *modus operandi* of the English board, as we expected to gain several points on examination and inspection ; they also observed our method of receiving.

Their method of inspection and examination was practically the same as ours, each animal being first passed upon by the inspecting officer and then tested for soundness by the veterinarian ; their inspection and examination was as rigid as our

own; all of the gentlemen we had the honor of meeting knew their business practically, and some of our own board were not reluctant to take advantage of several practical points from them.

Now, as to the price paid for the class of horses wanted, it would have been considered high two years ago, but so many of the horses had been purchased that the contract price had advanced considerably over the original; the prices ranged from sixty to eighty-four dollars; the demand was so great and the supply was exhausted to such an extent that the proprietors of the ranches had to go up into Idaho to obtain horses to do the usual horse work of their ranges.

After the departure of the English boards the supply of small horses in Nebraska, Dakota, Wyoming and Montana had been practically exhausted, while the kind of horses we were receiving still continued in abundance. Our horses for cavalry are generally fifteen hands three inches high, weigh about ten hundred and fifty pounds, cost from one hundred and ten to one hundred and twenty dollars each, and from what we could understand would be totally unfitted for South African service.

The surprising part of the whole thing to us is that the price of the wiry small horse of the western prairie remained so low when the demand was so great.

We do not believe that there is a single man in the U. S. Army, "horse expert" or "horse doctor," who could give pointers to any of the English boards we met with, in the inspection and examination of the horse, and the price was low considering the conditions.

As to their honesty, their uniform stands voucher for that. We believe it stands unsullied even though engaged in the trade of horse buying. Very respectfully,

GERALD E. GRIFFIN,
Veterinarian, Artillery Corps.

ENCEPHALITIS IN HORSES AND IMPACTION IN CATTLE.

COLUMBIA, TENN., April 2, 1902.

Editors American Veterinary Review:

DEAR SIRS:—We have lost a good many horses and mules this winter from encephalitis; also a good many cattle from impaction of the omasum.

I would be glad to hear from any one who has a treatment by which they can get good results. Yours truly,

A. O. KENNEDY.

SOCIETY MEETINGS.

OHIO STATE VETERINARY MEDICAL ASSOCIATION.

This association convened for its nineteenth annual session in Townshend Hall, Ohio State University, Columbus, on Jan. 14, 1902, with President Dr. S. D. Myers in the chair. Meeting called to order at 2 p. m., when Rev. W. O. Thompson, President of the University, was introduced and delivered to us a most cordial address of welcome, telling us of the trials and successes of the Veterinary Department of this university, as well as requesting all practicing veterinarians in the State to take a deep interest in the success of this especial department.

This *extempore* address was replied to by Dr. J. V. Newton as follows:

"Mr. President, Prof. Thompson and Members of the Ohio Veterinary Medical Association :

"GENTLEMEN :—It is my honor as well as my pleasure to have been chosen to respond to your cordial welcome just extended to us. While it may be a pleasure for your institution to entertain us, it is indeed a great pleasure for the State Veterinary Medical Association to be the guest of Ohio's greatest institution of learning, 'The Ohio State University.' Your invitation to meet here carries with it the conviction that the officers and faculty of your great institution places our organization and profession among the many agencies all working together as a harmonious whole, designed to bring American civilization to the front rank and to keep it there as the criterion, the emulation of which will be the aim of all the people of all clans who are working to lift humanity to its proper plane, which a poet of old told us is 'but one step below the angels.'

"Our organization is in favor of education ; aye, more ; it is in favor of higher education, and we hope to see the time when none but the alumni of regularly organized and fully equipped veterinary colleges will be allowed to practice veterinary medicine in this great State. A nation such as ours, which gets one-third of its food and a vast amount of its work from the animal kingdom, cannot fail to appreciate the valuable service of a profession whose equipment enables it to assist in keeping strong and sound the beast of burden and free from disease the animals raised for food.

"The members of the profession will no doubt pardon me if I for a moment dwell on the growth and progress of our profes-

sion during the last twenty years. About twenty years ago a few of us met in this city and organized the Ohio Veterinary Medical Association. Ohio was one of the first States to take this action. Most of us at that time were graduates of some foreign college. I am glad to say that to-day we have many good veterinary colleges in this country, and I am pleased to say that we have an excellent veterinary school in our own State, a part of the institution of which we are guests to-day.

"I doubt if there is a State in the Union to-day that is without a veterinary medical association. It is an undisputed fact that this veterinary association has done a great amount of good in our State.

"The veterinary associations and their members have done as much to prevent cruelty to animals as any other organization in existence. I call attention to work of our profession in assisting local societies for the prevention of cruelty to animals.

"'Worm in the tail' and 'hollow horn' and other misnomers are now a thing of the past among us, and animal ills are now treated from a scientific basis.

"I well remember a prominent veterinary surgeon of our State who about twenty-five years ago had a lucrative practice in one of our neighboring cities. Once, when he was called out of town, a young graduate was called in to see one of his patients. On his return he was telling one of his friends that a young graduate upstart had arrived in town, and 'I found him treating one of my patients, having a barometer in his rectum taking his temperament.' This man had a large practice, and I remember him having a case in court, and when the attorney asked him what his occupation was, he replied, 'A veteran surgeon.' 'Well, doctor,' said the attorney, 'what did you give the animal?' 'Some digitalis.' 'Doctor, what would be the effect of that drug on the animal?' 'It would be comforting to the mind, soothing to the bowels, a tonic and an anodyne.'

"I merely mention this to show what the profession was twenty-five years ago, and this is a fair example of the men who were caring for the live stock in our State at that time. I am sorry to say that there are some men practicing in our State to-day who are as ignorant of what they are doing for their patient as the party referred to. The facts are that a young man coming to this State twenty-five years ago, looking for a place to practice, the public looked upon him with a kind of suspicion, as the horse doctor of twenty-five years ago was looked upon as

a dead-beat and a man not to be trusted ; but to-day I am proud to say that the veterinary profession in the State of Ohio ranks on a par with any other of the professions.

"We are justly proud of our profession. Its calling is high, its aim is pure and its accomplishments make the world better for our being in it. The inventor may build his automobiles, patent his bicycles or construct horseless vehicles for business and pleasure, but the noble animal, the horse, and his distant relative, the tireless and persevering mule, are bound to remain man's best friend and constant companion.

"The chemist may compound his substitutes for milk, but the infant in arms and the old man in his tottering years, as well as the adult in health and strength, will always find nourishment and refreshment in the pure milk of the healthy cow.

"The vegetarian may exploit the advantages of a vegetable diet, but the human appetite, as found in the masses, will continue to crave for the steaks, chops and roasts that are to be secured from the hands of the butcher.

"So you see, my friends and members of the profession, we have many ways to ennable our calling and my prayer is that every member of our profession will give to it his best work of both mind and heart, being conscious in so doing that the world will be better for his having lived."

Roll-call showed the following veterinarians present :—F. E. Anderson, Findley ; S. E. Bretz, Nevada ; J. H. Blattenburg, Lima ; O. V. Brumley, Columbus ; J. C. Burneson, Wooster ; E. R. Barnett, Akron ; L. W. Carl, Columbus ; W. R. Clark, Wauseon ; E. H. Callender, Zanesville ; G. W. Cliffe, Upper Sandusky ; W. E. Clemons, Granville ; P. A. Dillahunt, Springfield ; G. W. Emery, Greenfield ; H. Fulstow, Norwalk ; J. D. Fair, Berlin ; W. H. Gribble, Washington C.H. ; T. B. Hillock, Coluibus ; W. C. Holden, Delphos ; R. G. Holland, Wellington ; R. C. Hill, West Alexandria ; W. R. Howe, Dayton ; C. E. Inskeep, Urbana ; J. E. Johnson, Piqua ; T. E. Jones, Newark ; T. W. Johnson, Sidney ; F. J. Kyle, Springfield ; C. E. Leist, Columbus ; S. D. Myers, Wilmington ; R. J. Michener, Lebanon ; J. V. Newton, Toledo ; J. W. Price, Lancaster ; E. L. Price, Circleville ; I. A. Ruby, Plymouth ; S. Sisson, Columbus ; F. F. Sheets, Van Wert ; Walter Shaw, Dayton ; E. H. Shepard, Cleveland ; W. J. Torrence, Cleveland ; G. R. Teeple, Napoleon ; D. S. White, Columbus ; Jos. Wingerter, Akron ; I. A. Wynn, Kenton ; F. H. Davis, Chicago, Ill. ; W. E. Wight and N. Rectewald, of Pittsburg, Pa., as well as a large number of

senior veterinary students, and horsemen, members of the Ohio Horse Breeders' Association.

Minutes of the last annual session were read and approved.

PRESIDENT'S ADDRESS.

Dr. S. D. Myers, President, then delivered a short address, as follows :

"GENTLEMEN:—We are gathered here to-day from all parts of the great Buckeye State to celebrate the nineteenth anniversary of the Ohio State Veterinary Medical Association.

" We are not gathered here for scientific gain alone, but also to extend a hearty and friendly handclasp with those we have met at former meetings, and, perchance, meet others who have not had the pleasure of being with us before.

" State associations should receive the support of the veterinarians, as they have advantages over the national organizations ; for instance, the national associations must of necessity be devoted more and more to sectional work. There are those who are engaged in sanitary work, including meat and milk inspection. Others are more interested in experiment - station work ; and, last, but not least, comes the general practitioner. Each of these three classes must receive special attention. We, as a majority, are classed among the general practitioners, and are enabled in our State association to study conditions that exist in our own State, and that are, therefore, of interest to us all. Again, the State association meetings are usually centrally located, so that as far as distance is concerned, it is possible for all the members to be present, whereas the National Association's meeting place moves over such a vast scope of country that it is impracticable to attend all the sessions.

" During the past year quite a commotion has been created in veterinary and medical circles by the declaration of Prof. Koch at the London Congress, that *bovine tuberculosis* cannot be communicated to man. The veterinary and medical professions are protesting vigorously against Dr. Koch's theory. However, we should not overlook the weight of the noted authority's claims.

" We as veterinarians have many things for which to be thankful. We have had a prosperous year, considered from a commercial standpoint. Business has been plenty during the past year and collections as a rule have been good. It may be of interest here to note the increase in our export of horses and mules, and it is gratifying to know that this increase has not been brought about by declining prices. The exports in 1892

were 5191; by 1895 the figures had reached 16,499; in 1896, 31,044 were exported; in 1897, 47,006; in 1898, 59,249; in 1899 we dropped back a little, to 52,553; in 1900, 108,091; and in 1901, 116,500 were exported.

"Another thing for which the veterinary profession has cause to be grateful is the number of new books which the veterinarian may add to his library. Some are new, others are recent translations, which are new to most of us.

"Again, during the past two years, we have not had to record the death of a member of this association; although the profession at large has lost by death a number of brilliant men, among these being Prof. William Williams, Dr. George Fleming, Dr. A. W. Clement, and Dr. R. S. Huidekoper.

"The keen interest in the clinics at the last meeting is heartily commended to your attention. They deserve all the encouragement that can be given to them. I think it proper that they be given an important place on the programme of our meeting. They will act especially as a stimulus toward bringing out the younger members of the profession.

"We are sorry to say that during our term of office the President and Secretary have been very much handicapped by a great many of the members not answering correspondence. The President and Secretary may have a certain object in view, and in order to accomplish that object, they may have to write several members. If one of those members fails to reply, the object aimed at may be lost. This is a serious detriment to the best interest of the association, and it is hoped that some attempt at advancement will be made along this line.

"We find by referring to our constitution that one of the objects of this association shall be the devising of ways and means by which we may procure the establishment of State laws for the protection of the qualified practitioner. We have no desire to discuss this subject, but if the matter should come up for consideration we would advise, instead of a general discussion by members and non-members as heretofore, that a committee of three or five be appointed to take charge of the matter and report to the association.

"We sincerely hope that this meeting will be a successful one. We have been especially fortunate in our surroundings; a better place to hold our meetings, and especially our clinics, would be hard to find.

"In conclusion, we wish to say a word in regard to the programme. The Secretary and myself have labored diligently to

prepare the programme, and we hope it will be of interest to you all. We have papers and clinics, which with the discussions, will consume most of our time.

"We would suggest that in order to make things run smoothly, that each one of you, and especially those who are to take part in the programme, make a special effort to be present at the time specified for the opening of the sessions."

SECRETARY'S REPORT.

Secretary W. H. Gribble offered the following as his annual report :

"MR. PRESIDENT—GENTLEMEN: It may be out of place in a report from the Secretary of such an association as this, to have anything to say except as to the work and finances of the association ; if that be true we owe you an apology for presuming upon your time and patience, for we confess in advance to having offered suggestions on matters we think of interest to the veterinary profession of this State, as well as to call your attention to some other affairs of special importance bearing directly upon this association itself. I presume first of all that it devolves upon me to explain why we had no semi-annual session in 1901. Your President and Secretary commenced early writing to members enlisting their assistance for the success of the summer meeting. The answers we received were somewhat like hen's teeth, few and far between, until your president becoming considerably discouraged suggested to us that if the attendance to the session was likely to be on a par with our correspondence we had better not have any meeting. We were of the same opinion, so took the liberty of writing to each and every officer in reference to the matter asking for a quick reply. The replies received were unanimous in the belief that a semi-annual session would not be a success as so many were intending to attend the meeting of the American Veterinary Association at Atlantic City, and could not well attend both. This, then, is the reason for no meeting. At once we began again, asking for volunteers to prepare for the present session, but somehow it seemed impossible to arouse any enthusiasm ; other secretaries of associations tell us their members proffer their services and name their subjects, but Ohio veterinarians seem to be lacking in personal confidence ; we all know it is not lack of ability ; Ohio never lacks that in anything, but nevertheless, one writes, 'I am not sure I shall be able to be with you, and it would be foolish to prepare it and then not be present,' but I see him here in the room. Another, 'I think

you should ask the older members as I would rather listen than talk, and besides it is not pleasant to be criticised by those longer in the profession than yourself.' Another: 'Oh, I never' could put my ideas on paper, so please excuse me this time; still another says: 'Doctor, anything I could prepare would be so commonplace that if anyone else would write it I should feel like laughing at them, hence expect the same feelings towards myself.'

"Early in December I sent one hundred postals supplemented with about forty letters, one or more into every county in the State, asking for the names and addresses of the graduate veterinarians in that particular county. These were sent whenever possible to a member of this association; if none resided in the county then to some known veterinarian, and as a last resort to the postmaster asking him to deliver it to the principal veterinary surgeon of that city. Our object was to get the names and addresses of all veterinary graduates possible, so as to mail them a personal invitation to this meeting. From the one hundred and forty communications, less than twenty-five answers were received; now think of the encouragement, twenty-four replies from one hundred and forty letters and less than half of this twenty-four were from members of this association, most of them were from graduates and non-graduates that we had never heard of, and from postmasters who said they knew of no graduate in their county.

"In spite of these discouragements we succeeded in getting together about two hundred names and had we only heard from all our own members who were written to, the number would undoubtedly have been above four hundred, as the cities of Akron, Cleveland and Toledo alone furnished the names of thirty graduates. As the time of the meeting drew nigh more interest was manifested and a very creditable program prepared, which we sincerely hope will be fully carried out with, if possible, some additions. Your secretary believes that the putting off of semi-annual meetings is not a wise plan; that meeting has always been a migratory one, bringing us into new localities amongst different laborers whose interest was thus awakened in the profession; while the annual meeting being by our by-laws set for Columbus only, makes any labor connected with the success of that meeting to devolve always upon the same set of men; if we are to have but one meeting a year let us so amend the by-laws that the annual meeting may be held in whatever city a majority of the members at a previous

meeting see fit to name, and by so doing secure a more equal division of labor and possibly a more general attendance. While personally opposed to this change, I would ask you to consider it, seeing that now for two years our semi-annual meeting has been for seeming good reasons revoked. Again we would ask that your next secretary be honored with replies to his correspondence, if it be only a postal card, so that he may know that all his mail is not lost in transit, besides a reply even in the negative is better than no reply at all. We would also call your attention to the non-payment of dues, and what should your secretary do, in his efforts to collect them ; ought he to write each delinquent asking for the several amounts due ; and if not paid, mark them on the books as suspended ; if this is the correct way, then the secretary should be ordered so to do, so as to avoid remarks as to his presumption of authority.

"We note with regret that some of our members are in the so-called patent medicine business, without first withdrawing their membership.

"One uses the pronoun I, about fifty times in his little pamphlet, in which he tells his readers of the amount of patience and study it took to discover his remarkable mixture, and winds up with the remark 'that we desire to impress our patrons that we understand our business.' We have another in which in italics it proudly says, 'we know our business.'

"One advertises a liniment, guaranteed to cure any case of lameness that has not assumed a chronic state ; it is chemically correct and bids fair to supersede all other liniments on the market ; (it surely ought to) seeing that it is such a strong anti-septic that it immediately destroys all germs and is valuable in the treatment of all wounds, as well as corns, bunions, ear ache, tooth ache, sore throat, rheumatism, frozen feet, etc. A blister is advertised guaranteed to cure any curable case of lameness ; it is the twentieth century blister par excellence and is truly a wonder worker. A colic cure is guaranteed to cure any case of colic ; made up of five ingredients, whose happy combination (according to the ad.) seems to be a stimulant, sedative, astringent, laxative. 'And for the purpose of further aiding in the relief of sick animals' (no other reason, of course) one has established a free information bureau. One would think that the time for such laudatory gush was past ; or are Barnum's words still true, 'the American people love to be humbugged.' We are also informed of another who is embarking in the same sort of enterprise, with his colic cure, blister, and condition powders ;

but we have not been honored with any of his literature, and, moreover, are told that he intends to ask for a withdrawal from membership at this session. Is there any explanation for these actions? do these graduates have no love for their profession from a professional standpoint, or is it for the easy earned dollar alone? and what makes it doubly peculiar is that two of these men are old and honored members of the profession, and have been members of this association ever since its organization in 1883.

"Several veterinarians in Ohio have started into this business during our residence in the State, but we know of but one who has apparently made it a monetary success, and that is with a so-called stock food; while we know of several who have lost many hard-earned dollars before they settled back again into regular practice; but there must be a fascination about it, in which each new-coiner imagines himself much smarter than the fellow that just failed; but, gentlemen, for one Gombault's Caustic Balsam there'll be fifty Elixirs of Life. The spirit of chance-it-once seems to pervade all channels of business; it seems a pity, in fact excites one's sorrow, to think that men will educate themselves in an honorable profession, in fact graduate from well known and honored colleges, only to become the advertisers of a pet compound perhaps of some value; or a fool mixture of no value whatever, when the equal of either could have been found without spending one minute inside the walls of any scientific school. These members have all violated Sec. V., Code of Ethics. There is some rumor of additional veterinary legislation during the present session of the legislature having especial reference to tuberculosis; but I do not believe the time to be ripe for a proper consideration of that subject by our law-makers; politics is in the saddle too strong for duty or even business to be justly and honestly attended to, and we had better let the matter rest, if possible, unless we were sure in advance that it could be bettered. Under the present law, as I understand it, no cattle are tested by the State unless request is made by the owners. This of itself bars that class of cows we most desire to reach, for the average dairyman is well versed in the common symptoms of the disease through the medium of the dairy and stock journals, and if he has heard one cow cough that settles him from making any request; so that practically only herds belonging to the State and county institutions, and such others as their owners have not the remotest suspicion of the disease being among

them, are tested, this latter class using the fact of the test as an advertisement. Be that as it may, the present law may be better (which is doubtful) than no law at all; but oftentimes, in amending laws, the opposite is produced from that which was anticipated.

" We would advise the appointment of a committee whose special duty it would be to try and secure lower railroad rates for our annual meeting. Political gatherings seem to have no trouble in securing reduced rates to Columbus, but agriculturists and their kindred associations are seemingly barred or unable to get within the charmed circle. Of course we were offered the one and one-third rate on the certificate plan, but with that we must guarantee one hundred tickets besides paying for a special agent. Take this week as an example. On the 12th and 13th tickets are sold at half fare (governor's inauguration). The United Mine Workers of America meet, commencing to-day, on the one and one-third certificate plan, tickets to be signed the 16th, and may on deposit be extended, good for several days. Then the State Boards of Health Convention, the Ohio Jersey Cattle Club, the State Horse Breeders' Association, the State Farmers' Institute, and the Ohio Agricultural Association, as well as ourselves, all meet between Monday and Thursday of the present week in this city, with none of the latter granted any concessions.

" No railroad but knows that more than one hundred will be present at these associations, and taking the fact of half fare Monday and the one and one-third fare of the mine workers it would have produced no hardship to them to have extended that rate three days more; besides being an advantage to the city of Columbus and a greater attendance at the meetings. If we have a special committee and these associations all meet next year during the same week as they have for years, would it not be easy by concerted action to obtain half rates; or at least one and one-third rates, by uniting and all leaving our tickets at some central location? We believe if all these associations by united demand cannot influence Columbus to obtain for them cheap railroad rates, their meeting in Dayton or some other central city would soon bring about this desired result.

" In conclusion, we are well pleased to see so many present, as up to a short time ago we were not very sanguine of a successful session, but its success well repays the officers and committees for the labor it has taken to bring this about. The literary program is full and the clinical material on hand is such as to

enable us to demonstrate every operation outlined on program, as well as several others. Twelve applications for membership received, \$100 collected; while the expenses of the year were but \$40, leaving us a net balance in the treasury of \$342.

"I thank you for the kindnesses shown us during the past year, which have been many, in spite of our fault finding; and hope you will accept these remarks simply as suggestions and act upon them as you see fit."

ELECTION OF OFFICERS.

Next order of business was the nomination and election of officers to serve for the coming year. Drs. Anderson, Hill and White were nominated for President, Dr. Carl First Vice-President, Dr. G. Cliffe Second Vice-President and Dr. Newton Third Vice-President; Dr. Hillock Treasurer, and Dr. Gribble Secretary.

The ballot for President resulted in the selection of Dr. Anderson.

There being but one nominee for each of the other offices, the rules were suspended and the Secretary instructed to cast the ballot of the association for their election.

The chair then declared the following to be officers-elect for the year 1902:

President—F. E. Anderson, Findley.

First Vice-President—L. W. Carl, Columbus.

Second " " G. W. Cliffe, Upper Sandusky.

Third " " J. V. Newton, Toledo.

Treasurer—T. B. Hillock, Columbus.

Secretary—Wm. H. Gribble, Washington C. H.

Quite an amount of correspondence was read, little of which called for the attention of the association. One, a letter from Dr. Cotton, regretting his inability to be present on account of a case in court; another a request from Dr. W. F. Derr, asking to withdraw from the association as he was engaging in the proprietary medicine business, regretting the necessity, as he had been a member since our organization twenty years ago. Another contained advertising matter, with name of advertisers suppressed; but which the writer vouched was the advertising material of two of our members. It was of a self-laudatory character and the medicines the quintessence of wonderland. The writer agreed to furnish these advertisements with names of the doctors attached. The business of Dr. Derr being contrary to our code of ethics, his request was granted. The Secretary was instructed to obtain the names of members engaged

in the same business and write them, offering the privilege of withdrawal from membership; or to appear at our next session, and show cause as to why they should not be expelled.

PAPERS PRESENTED.

The first paper on the programme was read by Dr. Anderson, "A Skin Disease." *

This paper was but little debated, as none but the writer seemed to have had any such experience. The next paper, "Pneumonia and its Treatment" * was read by Dr. J. D. Fair. This essay was debated at great length, so much so that the chair was compelled to call a halt. The debate showed the greatest extremes of treatment from simple nursing and good air with no medicine, to enormous doses of different stimulating or debilitating drugs, and what surprised some, was that bleeding was in vogue by more than one. A short-hand report of this debate would have been well worth the expense.

The meeting now adjourned to meet at 7.30 P. M.

Evening Session.—The members gathered together at the time agreed upon, but there was no President willing to call the meeting to order, owing to a different construction being put to the meaning of Art. IV., Sec. I.—"They shall assume the rôle of their respective offices, with the close of the labor of the session at which they were elected"; one claiming the session closed with adjournment for supper; the other, that *session* meant the whole series of meetings held under one call (this latter was the true intention of the section).

We compromised by calling the retiring Vice-President to the chair.

Dr. Blattenburg called the meeting to order at 8 P. M.

Dr. Michener read the report of a very interesting case. * Considerable discussion as to the probable cause.

"Ohio Combatting Tuberculosis" was the title of a paper by Dr. J. C. Burneson. * This was well discussed, as all such matters are at present, the discussion leading to the recent statements of Prof. Koch, and their rebuttal by others, as well as to the legislation controlling the disease in this State, of which practically there is none.

Dr. H. Fulstow (on the programme for the operation of ovariotomy of the mare) now read a paper reporting his cases and describing the operation of vaginal ovariotomy.* Several questions were asked, but the discussion was deferred until during the operation, on to-morrow.

* Will be published in an early issue of the REVIEW.

Dr. Howe now took the floor and delivered excellent eulogies to the memories of Dr. A. W. Clement and Dr. Rush S. Huidekoper, after which a resolution was adopted appointing a committee of three to draft suitable resolutions of respect upon the loss of both. W. R. Howe, L. W. Carl, W. J. Torrence, committee.

The chair appointed Drs. Hill, Dillahunt and Cliffe a committee to audit the books of the Secretary and Treasurer; after which we adjourned to meet at 8 A. M. at the Veterinary Hospital prepared for work at the clinics.

THE SURGICAL CLINIC.

Jan. 15, 1902.—Met at the Veterinary Hospital at 8 A. M. with plenty of clinical material and no lagging of operators, each and every one being on time ready and willing to operate, and while operating described in detail each step of the operation and answered any questions asked of them; so that the clinics were really a pleasure as well as instructive.

Two bitches were spayed by Drs. Anderson and Cliffe.

Dr. Torrence performed plantar neurotomy on both front limbs of a gentleman's driving horse.

Dr. Myers explained his throwing harness and demonstrated the ease with which he could throw and conveniently confine the animal; he also demonstrated his method of operating and firing an old quarter-crack, the firing being deep and in the form of a half circle, with the convexity downward.

Dr. Shaw operated on an old roarer under complete anaesthesia, all taking a peep at the exposed vocal organs.

Stringhalt was explained, as well as the operation for its relief; and the operation of peroneal tenotomy, performed by Dr. Blattenburg.

Dr. Hillock performed cunean tenotomy, an easy operation on a clean hock, but we have found it more than once to be quite difficult when a bony spavin was present, and we believe the operation to be of little value unless ankylosis has taken place and the lameness is due to friction on the cunean tendon.

Operations of minor importance were either explained or performed by other members; but the main interest seemed to be centred on vaginal ovariotomy on the mare by Dr. Fulstow. The mare was given chloral hydrate; confined only with twitch and foot hobble, and standing at one end of a large operating room, a rope stretched across the room back of the mare with no one inside the ring but the operator and twitch-holder, making an ideal position for all to see (what little of the oper-

ation can be seen) the different steps of the operation, which the operator freely explained as he went along, and also invited each that so desired to pass his arm into the vagina and find the incision.

At the close of the clinics the unanimous applause showed that they had been a complete success, which, in itself, repaid the committee and officers for their time and trouble and many were the expressions "let us have more of them."

One peculiarity of the clinics was the different strengths and weights of throwing apparatuses; one was used that we doubt weighed to exceed one or one and one-half pounds and could be carried in the coat pocket; another that weighed not less than twenty-five pounds with $\frac{3}{4}$ -inch rope and double stitched leather. The former was considered unsafe, but their owner vouched for their strength, applied them himself on the mare and they proved sufficient.

Session now reconvened, with Dr. Blattenburg in the chair.

Dr. E. R. Barnett, of Akron, applied for reinstatement, and same was granted.

NEW MEMBERS.

New members proposed were:

Prof. S. Sisson, Columbus (O. V. C. 1891); vouchers, Walter Shaw and Sidney Myers.

J. C. Burneson, Wooster (O. V. C. 1891); vouchers, L. W. Carl and Walter Shaw.

F. J. Kyle, Springfield (O. V. C. 1891); vouchers, Walter Shaw and L. W. Carl.

W. E. Clemons, Granville (O. V. C. 1890); vouchers, L. W. Carl and T. B. Hillock.

H. J. Carpenter, Lima (O. V. C.); vouchers, J. H. Blattenburg and W. H. Gribble.

E. H. Callender, Zanesville (O. V. C. 1891); vouchers, L. W. Carl and W. H. Gribble.

F. F. Sheets, Van Wert (O. V. C. 1891); vouchers, J. H. Blattenburg and G. R. Teeple.

I. A. Wynn, Kenton (O. V. C. 1895); vouchers, L. W. Carl and Wm. R. Howe.

Jos. Wingester, Akron (O. V. C. 1895); vouchers, Walter Shaw and E. R. Barnett.

W. R. Clark, Wauseon (O. V. C. 1898); vouchers, G. R. Teeple and J. H. Blattenburg.

J. E. Johnson, Piqua (O. V. C. 1896); vouchers, R. C. Hill and S. Sisson.

C. E. Inskeep, Urbana (O. V. C. 1895); vouchers, R. C. Hill and S. Sisson.

The full list was read by the Secretary and no objection being offered, the rules were suspended and the candidates elected to membership. All being present except Dr. Carpenter, each in turn offered a few appropriate remarks. The special committee appointed to draft suitable resolutions on the deaths of Drs. Huidekoper and Clements offered the following:

"WHEREAS, We learn with regret of the recent death of DR. ALBERT W. CLEMENT, of Baltimore, Maryland, a fellow practitioner, who by reason of the successful manner in which he has practiced in his chosen profession for so many years, has established himself in our memories, and whom we wish to venerate as a man and as a fellow practitioner, and

"WHEREAS, It has pleased the Omnipotent God to take from our profession such a noble, earnest, and valuable member, and

"WHEREAS, The Ohio State Veterinary Medical Association deeply deplores the loss of such a highly educated man, yet we feel that it is our duty to submit to the manifestations of wisdom of the Almighty God, and we therefore

"*Resolve*, That the sincere sympathy of this Association be extended to his bereaved widow and family, and

"*Resolve*, That a copy of these resolutions be sent to his widow, that a copy be spread on the books of this Association and that copies be sent to veterinary journals for publication.

"WM. R. HOWE,
"L. W. CARL,
"W. J. TORRENCE. } Committee."

"The Ohio State Veterinary Medical Association feels, in common with all veterinarians throughout the United States, a desire to pay its tribute of respect to the memory of the late DR. RUSH SHIPPEN HUIDEKOPER, who was not only a leader in thought, but also a foremost leader in action for the cause of the science to which he had turned out of pure love of the brute creation, and out of a sincere desire to alleviate the sufferings of the dumb friends of man.

"To such a supremely elevated character, adorned as he was with all that the advanced thought and skill of scientific research and expert knowledge could confer, both as regards the general practice of medicine and surgery and the equally beneficent practice of animal pathology, mere words fail to convey a full appreciation of the measured thought of his value to the

world, to the profession and to his family, and especially to us as an organization working to dignify and elevate the profession which he so richly endowed by means of his vast knowledge and his sturdy activities.

"Had Dr. Huidekoper done nothing more than what he accomplished in his splendid struggle for Congressional recognition of the veterinary profession in its relation to the military arm of the government, veterinarians everywhere would owe him a debt of grateful remembrance which no language could express; but he did far more than that, as we of the inner circle can testify; and therefore it is that we thus make known our desire to place upon the records of this association this permanent tribute to his memory, and to

"*Resolve*, That in the death of Dr. Huidekoper the veterinarians of America have lost a noble champion of their cause both in military and civil life, and the profession will feel keenly the loss of one of its greatest exponents and practitioners; and it is further

"*Resolved*, That a copy of this memorial be spread on the minutes of this association, and also that copies be sent to the veterinary journals for publication.

"Wm. R. HOWE,
"L. W. CARL,
"W. J. TORRENCE. } Committee."

The special committee appointed to audit the books of the association offered the following report, which was duly accepted:

"We, the undersigned committee, appointed to audit the books of this association, find the accounts correct and a balance in the hands of the Treasurer of \$342.29, including all receipts and expenditures to date.

"R. C. HILL,
"P. A. DILLAHUNT,
"G. W. CLIFFE,
"Committee."

STANDING COMMITTEES.

President F. E. Anderson appointed the following standing committees:

Contagious Diseases.—Sidney D. Myers, J. C. Burneson, E. H. Shepard.

Veterinary Progress.—David S. White, G. W. Cliffe, Walter Shaw.

In selecting a meeting place for the semi-annual session,

Toledo, Ohio, was the choice ; the exact date to be determined by Dr. Newton and the Secretary.

The following resolution was offered, and on motion adopted :

"Resolved, That votes of thanks be tendered the officers of the University for the favors shown us, and especially those connected with the Veterinary Department, in allowing the use of hospital, instruments, material, etc. To our President, Secretary and special local Committee on Arrangements (O. V. Bruinley, L. W. Carl, T. B. Hillock) for their untiring efforts in preparing such a creditable programme. To the members who read papers, and to those who performed operations, for their necessary assistance ; for it was to these, taken as a whole, that enabled this session to be made a clinical, literary and social success."

The meeting now adjourned, to meet again at the call of the Secretary, and as each wended his way homeward he felt that his trip had not been in vain ; he had been well paid for his expense and time, and those who had failed to attend had missed one of the best meetings of the Ohio State Veterinary Medical Association.

W. H. GRIBBLE, D. V. S., *Secretary.*

ILLINOIS STATE VETERINARY MEDICAL ASSOCIATION.

The twentieth semi-annual meeting was held at the Hotel Fey, Peoria, Ill., February 19, 1902, and was called to order by President Joseph Hughes.

The following members were present : Drs. Albert Babb, Springfield ; L. C. Tiffany, Springfield ; D. E. Kinsella, Chillicothe ; J. T. Nattress, Delavan ; F. H. Ames, Canton ; M. A. Storry, Bradford ; N. J. Stringer, Walseka ; T. J. Gunning, Neponset ; H. A. Pressler, Fairbury ; C. D. Hartman, Peoria ; C. J. List, Havana ; John Scott, Peoria ; W. H. Welch, Lexington ; A. C. Worms, E. L. Quitman, Joseph Hughes, Chicago ; Jas. Smellie, Eureka. Visitors : Drs. M. C. Eckley, Galesburg ; E. D. Yerion, Elmwood ; Jas. Wood, Pekin, and Mr. Louie Rierz, representing Sutcliff & Case, of Peoria.

The minutes of the last meeting were read and approved.

The following applications were received and on motion were duly elected to membership : Dr. L. C. Tiffany, vouchers, Drs. John Scott and T. J. Gunning ; Dr. D. E. Kinsella, vouchers, Drs. John Scott and Jos. Hughes.

Receipts during meeting, \$13.00. Bills for stationery and Secretary's fee, for \$40.50, were audited and ordered paid. Report of Treasurer showed a balance of \$42.85 on hand.

Mr. Rierz, on behalf of the drug firm of Sutcliff & Case, extended an invitation to the association to visit their elegant establishment, which was accepted and the meeting adjourned until 1 P. M.

Dr. Nattress read a report of the following cases : "Trehining Both Sinuses," "Amputation of Rectum," also a remarkable recovery of a dog with leg nearly cut off. Discussed by Drs. List, Quitman and Worms.

Dr. Tiffany gave a splendid talk on "The So-called Corn-stalk Disease."

The following resolutions were offered and passed unanimously :

"Resolved, That the Illinois State Veterinary Medical Association, in session at Peoria, Feb. 19, 1902, does hereby protest against the custom of compelling graduates of recognized three-year colleges to pass the examination before the State Board of Veterinary Examiners. Also,

"Resolved, That we do hereby protest against any professor or instructor connected with any veterinary college in the State serving on the Board of Veterinary Examiners."

The Secretary was instructed to submit the above resolutions to the appropriate boards.

The association reconvened at 1 P. M.

Dr. Albert Babb read an unusually interesting paper on "The Business Relations of the Veterinarian."* Discussed by Drs. Quitman, Stringer, Worms, Scott and Hughes.

Dr. H. A. Pressler read a paper on "A Peculiar Complication of Strangles." Discussed by Drs. Stringer, Quitman, List and Hughes.

Dr. F. H. Ames read the "Reports of Cases," which were very interesting. (1) A peculiar growth below stifle of cow; (2) A case of retained foetus in womb; (3) A schirrous cord. Discussed by Drs. Stringer, Gunning, Nattress and Welch.

Sec. I., Article II., of By Laws was changed to read "December" instead of "November."

Meeting adjourned to meet in Chicago in December at the call of the President.

W. H. WELCH, *Secretary.*

* Will be published in an early number of the REVIEW.

WISCONSIN SOCIETY OF VETERINARY GRADUATES.

The annual meeting was held at Madison, March 5, at two o'clock P. M., and was called to order by the President, Dr. C. E. Evans. Those present were Drs. W. G. Clark, B. L. Fossee, A. H. Hartwig, R. S. Heere, J. T. Hernsheim, L. N. Jargo, G. Ed. Leech, E. A. McCullough, A. J. Nelson, F. J. Roub, E. D. Roberts, D. Roberts and S. S. Snyder. Visitors were Drs. George E. Allen, Ft. Atkinson, M. H. Reynolds and Dr. S. D. Brinham, of Minneapolis, Minn.

The Secretary's and Treasurer's reports were read and accepted.

It was moved and seconded that the chair appoint a committee to draw resolutions on the death of Dr. C. H. Ormond. Carried. The President appointed Drs. D. Roberts, Hernsheim and Snyder.

The terms of Drs. Clute and Leech on Committee on Legislation having expired, it was decided that the chair appoint members to fill vacancies.

The application for membership of Dr. A. H. Beckwith, Shullsburg, Wis., was reported favorably, and on motion he was declared elected.

Dr. G. Ed. Leech, having removed to Winona, Minn., requested an honorary membership. On motion, the application was granted.

Dr. F. J. Roub read a report on "Poisoning by Sinapis Nigra,"* which was discussed by Dr. D. Roberts. Dr. Beattie reported a similar case.

On motion, a vote of thanks was tendered the essayist.

On motion, the society proceeded to the election of officers, which resulted as follows:

President—Dr. F. J. Roub, of Monroe.

Vice-President—Dr. R. S. Heere.

Secretary—Dr. S. Beattie.

Treasurer—Dr. S. S. Snyder.

Board of Censors—Drs. B. L. Clark, A. J. Nelson, and H. P. Clute.

On motion the society adjourned to meet at 7.30 P. M.

Reconvened at 7.30 P. M. The President appointed Dr. R. H. Harrison to fill vacancy of Dr. C. H. Ormond in revisionary committee and Dr. S. Beattie to fill vacancy of Dr. G. Ed. Leech on Committee on Legislation.

* Will be published in an early issue of the REVIEW.

On motion, Dr. Ormond was placed on honorary member roll.

Dr. W. G. Clark read a paper by Dr. J. M. O'Reilley on "The Use of Eserine in the Treatment of Colic in the Horse."

On motion discussion closed until next meeting, as essayist was absent.

Drs. M. H. Reynolds and S. D. Brimhall, of Minneapolis, Minn., were present in behalf of the American Veterinary Medical Association, and addressed the meeting, extending invitations to our society to attend that meeting to be held at Minneapolis, September 2 to 4, 1902.

It was moved and seconded that the Secretary send each member of our association an invitation to attend the American Veterinary Medical Association meeting. Carried.

The veterinary laws of Wisconsin were discussed by several members, and it was moved and seconded that the Committee on Legislation frame a bill for a State board, this bill to be presented at our next meeting. Carried.

It was moved and seconded that a committee consisting of Drs. Clute, Roberts and Harrison be appointed to furnish clinical material for our next meeting at Milwaukee. Carried.

Resolutions on the death of C. H. Ormond, of Milwaukee, were read as follows:

WHEREAS, It has pleased the Almighty to remove from our midst our esteemed member, Chas. H. Ormond, and

WHEREAS, The intimate relation and business intercourse with him have been most pleasant, makes it befitting that we publicly record our appreciation of him; therefore, be it

Resolved, That in the loss of C. H. Ormond we lose a friend and valued member of our association and profession. Therefore, be it

Resolved, That the deep sympathy of this association be extended to his relations and friends; and be it further

Resolved, That a copy of these resolutions be forwarded to his relations, spread upon our records, and published in the veterinary journals.

On motion the society adjourned to meet at Milwaukee subject to the call of the President and Secretary.

S. BEATTIE, *Secretary.*

"I THINK THE REVIEW IS NEEDED by every practising veterinarian to keep posted on all progress in medicine."—(F. E. Thomas, V. S., Powhatan, Ohio.)

MAINE VETERINARY MEDICAL ASSOCIATION.

The quarterly meeting of this association was held in Waterville, Maine, April 9th, 1902, at the home of Dr. A. Joly, with President Dr. I. L. Salley in the chair.

Owing to the very disagreeable weather and great distance many of the members have to travel in order to attend the meetings, the attendance was not very large; nevertheless Drs. Salley, West, Joly, Freeman and Blakely answered to the roll.

The minutes of the previous meeting were read and approved.

Letters of regret for not being able to attend were received from Dr. F. L. Russell and Dr. J. A. Ness.

Under the head of new business the discussion of a veterinary bill was taken up and Dr. Joly made a motion that the President appoint a Committee on Legislation to consist of eleven members, including the President, to carefully consider and draw up plans for presenting a veterinary bill before the next legislature.

The motion being seconded by Dr. West, the President appointed the following members on that committee: Drs. Russell, Huntington, West, Perry, Goddard, Freeman, Purcell, L. S. Cleaves, Joly and Blakely.

Although the association, in their endeavors to secure the passage of a veterinary bill, have failed time and time again, the members are still unwilling to believe that it is an impossibility, and they intend to try again with renewed vigor and courage, believing that if every member will do his duty, success will crown their efforts.

The last thing in order being the reading of papers, the members had the pleasure of listening to a paper by Dr. W. L. West, of Belfast, entitled, "A Plea for More Careful Diagnoses." The subject was treated in a masterly way and the doctor deserves great credit for the manner in which he handled the subject. The association voted to extend a "vote of thanks" to Dr. West for his efforts, and the hour being late, the members decided to adjourn after concluding to meet in Northport, Maine, on July 9th, 1902. C. L. BLAKELY, M. D. V., Sec.

**NEW ENGLAND ALUMNI ASSOCIATION OF THE
AMERICAN VETERINARY COLLEGE.**

The annual meeting and banquet was held April 19, at 6 P. M., at the Copley Square Hotel, Boston, Mass., and a very enjoyable reunion took place. Dr. Madison Bunker, '81, of New-

ton, Mass., occupied the head of the table; upon his right was Prof. Andrew Smith, of Toronto, Can., and Austin Peters, '83, of Jamaica Plain, Mass., while to the left were Profs. James L. Robertson, '76, and Roscoe R. Bell, '87, of New York. On either side of the long table were seated John F. Winchester, '78 (President of the American Veterinary Medical Association), of Lawrence, Mass.; Lester H. Howard, '82, of Boston; George P. Penniman, '77, of Worcester, Mass.; W. L. LaBaw, '90, of Boston; W. H. Dodge, '92, of Leominster, Mass.; W. A. Sherman, '81, of Lowell, Mass.; C. H. Tilton, Jr., '96, of Ashland, Mass.; John J. Riordon, '94, of Beverley Farms, Mass.; and Charles L. Adams, '96, of Danielson, Conn. Addresses were made by Profs. Robertson, Bell and Smith, following which Dr. Winchester delivered a short history of veterinary education in America,* which was much enjoyed, and Dr. Peters detailed the condition of the contagious diseases of animals laws and regulations in the Bay State. Following this Dr. Penniman told of the early efforts at education in this country, and paid a tribute to the memory of the late Prof. Dadd, of Boston; among other things how he met a very heroic death; after saving seven lives from drowning, he lost his own. Drs. Howard and LaBaw also spoke in a pleasing manner, while each one present had a good word to say of their *alma mater* and the perpetuation of her memory through associations like this. When the meeting finally dissolved at 10 o'clock the guests and most of the members repaired to the Horse Show, which was in progress, and enjoyed the occasion very much. It was by far the most enjoyable reunion which the association has ever held, and will do much toward making the next one more largely attended.

ALLEGHENY COUNTY VETERINARY MEDICAL ASSOCIATION.

This young association held well attended monthly meetings during the winter, and accomplished much good committee work, especially in efforts to adopt and establish a scale of fees or charges for professional visits and surgical operations. It was claimed some parties were making a practice of dividing fees with coachmen and others were charging less than customary in this locality.

Drs. Gearhart, Richards, Spindler and Waugh were ap-

* We secured the Doctor's notes upon this subject and will publish them in an early number of the REVIEW.

pointed a committee on resolutions on the death of the late Dr. R. S. Huidekoper.

Drs. Boyd and Spindler presented excellent papers and reported interesting cases in practice.

Dr. A. Leteve, of Magee Pathological Institute, Mercy Hospital, delivered a very interesting and instructive lecture on the latest facts relating to tetanus, including serum therapy combinations, giving favorable results. Drs. McNeil, Meyer and Waugh indulged in general discussion, and Dr. Leteve kindly answered many inquiries.

JAMES A. WAUGH, V. S., *Secretary.*

ALUMNI ASSOCIATION OF THE NEW YORK AMERICAN VETERINARY COLLEGE.

This association met during the afternoon of April 1 in the lecture room of the college, and transacted routine business, with the election of officers.

In the evening a banquet was held at the Hotel Marlborough, 36th Street and Broadway, with a large number in attendance, including delegations from Massachusetts, New Jersey, Pennsylvania, Maryland and other points. It was probably one of the largest and most enjoyable reunions ever held by this association or the ones from which it sprung. Dr. Wm. J. Coates, dean *pro tem.* of the college, acted as toastmaster, and he seemed to have received an inspiration from the God of Mirth, for he spoke in the happiest strain and each introduction of a speaker was the occasion for a witty sally at the prospective orator, putting the entire company in a pleasant humor and adding much to the pleasure of the occasion.

When the cigars were served the toastmaster introduced the Chancellor, Dr. H. M. MacCracken, who responded to the subject of "Universities," in which he spoke words of encouragement to the alumni of the Veterinary Department of New York University, telling them of the efforts being made by the parent in behalf of its offspring, and assuring them that nothing would be left undone to place the veterinary school upon a successful basis. Then Dr. Munn, the veterinarians' good friend, told about "Veterinary Education" in a broad sense, and Prof. J. L. Robertson spoke feelingly upon "Veterinary Science." Dr. Robert W. Ellis elucidated the subject of "Alumni," and Prof. H. D. Gill took up the cause of the "Faculty" and spoke from the standpoint of a member, while the versatile Dr. W. Horace

Hoskins did full justice to the cause of "Journalism," saying among other things, that he hoped to see medical periodicals eliminate the editorial page entirely, filling the journal with good original articles and allowing the reader to draw his own conclusions. We rather imagine that such a publication would be too dry for American readers, and besides many advances in medicine and in the welfare of the profession are brought about through judicious and wise editorial treatment. Dr. Wm. Herbert Lowe was thoroughly qualified to speak upon the subject of "Legislation," and he told the members about the successful efforts of New Jersey in that direction. Following Dr. Lowe's address, Dr. Roscoe R. Bell spoke to the toast of "New Remedies," and then the toastmaster called upon the various diners, who responded in brief and in a pleasing manner. Among these were Drs. Lellman, Satterlee, Ackerman, Howard, Glennon, Shorey, Deronde, Miller, Hasslock, Cramer, McTammay, Burns, T. E. Smith, and Ferster. When the banquet broke up at 12 o'clock it was with the feeling that a most enjoyable reunion of the alumnae had taken place.

AMERICAN VETERINARY MEDICAL ASSOCIATION.

The membership of the A. V. M. A. is taking general interest in the meeting to be held in Minneapolis next September, and the following have offered contributions for the programme : Dr. F. Torrence, Manitoba ; J. S. Anderson, Nebraska ; T. D. Hinebauch, North Dakota ; W. Horace Hoskins, Pennsylvania ; M. E. Knowles, Montana ; C. A. Carey, Alabama ; N. S. Mayo, Kansas ; C. E. Ellis, Missouri ; E. A. A. Grange, New York.

The Secretary hopes that all those who have something of value to contribute will communicate with him at the earliest possible moment, that he may arrange a most attractive programme.

The local Committee of Arrangements has selected the West Hotel for official headquarters of the meeting, and as the Minnesota State Fair will be held in Minneapolis during the same week it will be advisable for the membership to make early arrangements for rooms.

NEW JERSEY STATE BOARD OF VETERINARY MEDICAL EXAMINERS.

Governor Murphy has appointed the following Board to act under the new law : Dr. William Herbert Lowe, Paterson (Passaic County) ; Dr. T. Earle Budd, Orange (Essex County) ;

Dr. T. E. Smith, Jersey City (Hudson County); Dr. Thos. B. Rogers, Woodbury (Gloucester County); Dr. Whitfield Gray, Newton (Sussex County).

The Board will hold its first meeting at the Capital building in Trenton on the first Monday in May (May 5th).

CONNECTICUT VETERINARY MEDICAL ASSOCIATION.

The regular annual meeting was held at the Hotel Hartford, at Hartford, Tuesday, February 4th, 1902, afternoon and evening.

Dr. E. C. Ross, the President, called the meeting to order at 3 o'clock. The following veterinarians were present: *Members*—Drs. Ross, Lyman, Jackson, Devereau, Witte, Crowley, Whitney, Hyde, Atwood, Keeley, Bland, Bates, Dow, and Donaldson. *Visitors*—Drs. Parkinson, Ingram, McGuire, and Finnegan, also Mr. St. Johns of the *Hartford Times*.

The minutes of the last meeting were read and ordered accepted as written.

The Secretary was instructed to correspond with Gibson & Co., of New York, relative to the association's stone for printing certificates.

Motion was made and carried to give Dr. L. V. Ketcham, formerly of Woodbury, Conn., a demit, and the Secretary issued same.

Motion made by Dr. Bland, seconded by Dr. Hyde, that those veterinarians present that are not members of the association and are eligible to become members, shall be admitted to free membership upon writing an application of such to the Secretary and depositing one dollar with him. Motion carried.

Drs. Ingram, McGuire, Parkinson and Finnegan were admitted to membership upon the strength of above motion.

Motion made by Dr. Hyde that the changes proposed in the By-Laws at the last meeting be adopted as read from the records, seconded by Dr. Witte. This motion was amended to read: "If the President and Secretary should think it advisable, they should first submit the changes to some competent lawyer to learn if the alterations have been made in a legal manner. Motion carried. Motion made by Dr. Hyde and seconded by Dr. Ingram, that Art. IV be continued on the table until the next meeting. Motion carried.

Motion made by Dr. Lyman, seconded by Dr. Bland, that

the candidates before signing the Constitution and By-Laws shall present to the Secretary the Treasurer's receipt for his initiation fee of one dollar ; and for his certificate of membership shall pay an additional fee, hereafter to be provided for, that shall defray the expenses incurred in the issuing of such certificate as may be provided by this association for members. Motion carried.

Treasurer's report was read by Dr. Whitney, and it was voted to adopt the report as presented.

Motion was made by Dr. Bland and seconded by Dr. Ingram that this association adopt resolutions upon the death of Dr. Huidekoper, of Philadelphia, and Dr. Prophet, of Suffield, and that these resolutions be sent to the veterinary journals * and placed on the records of the association, and that the Secretary be instructed to draw up said resolutions. Motion carried.

Dr. J. F. Ladue, of New Haven, made application for membership. Vouched for by Dr. Whitney. Dr. Ladue was found to be qualified by board of censors and admitted to membership.

Dr. E. H. Lehnert, of the Connecticut Agricultural College, at Storrs, made application for membership. Vouched for by Dr. Lyman. Secretary was instructed to inform Dr. Lehnert that if he would send the necessary fee he would be enrolled as a member.

Neither the President, Dr. Ross, nor Dr. Lyman, the Secretary, could be induced to accept renomination, though it was the earnest wish of all the members present that they should serve for another year.

The election of officers resulted as follows :

President—Dr. Andrew Hyde, Norwalk.

First Vice-President—Dr. Thomas Bland, Waterbury.

Second Vice-President—Dr. Harrison Whitney, New Haven.

Secretary—Dr. B. K. Dow, Willimantic.

Treasurer—Dr. E. C. Ross, New Haven.

Board of Censors: Drs. H. E. Bates, S. Norwalk; P. T. Keeley, Waterbury; F. A. Ingram, Hartford; G. H. McGuire; New Britain : R. D. Martin, Bridgeport.

It was voted to hold the next meeting of the association at Hartford the first Tuesday in August.

Dr. Whitney mentioned that Dr. Nathan Tibbals wanted to dispose of his library of veterinary works, and as Dr. Mayo, who had had the matter in hand had discontinued his services

* Published in March REVIEW.

at Storrs, Dr. Whitney was instructed to correspond with Dr. Lehner relative to the library.

A recess of ten minutes was declared. After the recess Dr. Hyde read a paper on "Milk Inspection,"* the discussion of which was left over, as well as the other papers, until the next meeting.

Motion made and seconded that meeting adjourn, which was done.

B. K. Dow, *Secretary.*

NEWS AND ITEMS.

GREAT BRITAIN, it is stated, has spent \$25,000,000 in this country for horses and mules.

DR. ELISHU HANSHEW, of Brooklyn, N. Y., has purchased and occupied a new infirmary at 125 and 127 Carlton Avenue.

DR. GEORGE H. BURNS, of Brooklyn, N. Y., is taking the spring bacteriological course at the Hoagland Laboratory, in that city.

DR. JOHN M. PARKER, formerly of Haverhill, Mass., is serving the British government in a responsible veterinary position in charge of remounts in Cape Colony, South Africa.

"LORD BRILLIANT," Dr. John L. Wentz's grand little high stepper, received his 400th blue ribbon at the Boston Horse Show on April 19, and his 60th championship. He was purchased a few years ago for \$145.

DR. WILLIAM SHEPPARD, of Sheepshead Bay, N. Y., acted as veterinarian to the recent Brooklyn Horse Show, and Drs. Howard, Plaskett, and Blackwood acted in a similar capacity for the Boston Show, while Prof. Andrew Smith officiated at the latter exhibition as one of the judges.

SO FAR AS WE KNOW, New Jersey holds the record for celerity in passing a veterinary regulating law. The bill was introduced Feb. 17 and was approved by the Governor on March 17 (just one short month).

"PARTURIENT PARALYSIS" is the subject of Bulletin No. 21 of the Florida Agricultural Experiment Station, prepared by Dr. Charles F. Dawson, Station Veterinarian, and recommends the Schmidt treatment, with full directions, at the same time condemning all forms of drenching.

DR. COLEMAN NOCKOLDS, 1st class Vet., U. S. Army, Batangas, Philippines, has been seriously ill with dysentery, but is much better. He employed his convalescent period in pre-

* Published in March and April numbers of REVIEW.

paring an excellent paper on "Some Wounds of War," for REVIEW readers. The first installment has been received, and will soon begin publication.

DR. PETERS APPOINTED CHIEF OF MASSACHUSETTS CATTLE BUREAU.—"Dr. Austin Peters, chairman of the late Cattle Commission, now becomes Dr. Austin Peters, Chief of the Cattle Bureau of the State Board of Agriculture. It is a case of an old head with a new title and a new office, and it is reasonably safe to anticipate that the functions of the new office will be discharged with the same skill and fidelity as characterized the conduct of the old one. This is the first appointment under Gov. Crane's consolidation programme, and it will do for a sample."—(*Boston Herald, March 27.*)

JUST WHAT SHOULD BE DONE.—"Of course, you get lots of suggestions how to run a journal. Now, original articles and papers read at the different society meetings are very interesting and often valuable, but these often contain the opinions of the individual practitioner. If it were possible, the opinions and experiences of those practitioners who enter into the discussions of the many papers would be of immense benefit and a source of great information to your subscribers. It seems to me that if a suggestion were given to the secretaries of the different associations, many of them would go to the pains of noting the most important features of these discussions and so enhance the value of your journal immensely."—(*A. S. Williams, Marysville, Cal.*)

MR. A. S. SHEALY, who has been assisting Dr. G. E. Nesom, Veterinarian to the South Carolina Experiment Station, at Clemson College, S. C., for the past year, has secured leave of absence for the coming year to finish his course at the Iowa State College. His place will be vacant after Sept. 1st, 1902, and it is desired that an assistant be employed to fill the vacancy by the first of June. The position may prove permanent. The work consists of State inspection of diseased animals, experiment station work and teaching in the short course in veterinary medicine. The salary has not been definitely decided, but will pay a fair salary for the right man.

"AS LONG AS A FLOUR BARREL."—It is probable that at first thought most persons would be inclined to doubt the accuracy of the old saying that a horse's head is as long as a flour barrel. Flour barrels vary somewhat in length. Some are made stouter and shorter, some slender and a little higher. An average flour barrel is about twenty-nine inches in height. Three horses were measured. One of these horses was said to have

rather a large head for its size ; it wasn't a very big horse. This horse's head, exclusive of the ears, measured 28 inches in length. The heads of the two other horses, which were of an average size, with average heads, measured, one, 27 inches, the other 27½ inches. So that it appears that the old saying is substantially true.

THE HOOD FARM, near Lowell, Mass., probably the most extensive home of prize-winning Jersey cattle in America, was visited by a party of veterinarians, including Profs. J. L. Robertson and Roscoe R. Bell, Drs. J. F. Winchester and W. A. Sherman, on April 20th. Dr. Sherman is veterinarian to the farm, and his guests were shown much courtesy by the Superintendent, Mr. Carpenter, who had caused to be prepared a delicious luncheon for them, after which every detail of the establishment was gone through, including the extensive piggery of some 300 Berkshires. The systems of feeding and care are as near perfect as it is possible to get them, and the sanitation and ventilation are more carefully and intelligently arranged than we have ever seen. Visitors are always welcome, and it is very well worth a long journey to behold.

ERRATA.—In the article on "Milk Inspection," by Dr. Andrew Hyde, of Norwich, Conn., published in the REVIEW for March and April, the following errors are noted by the author : In March REVIEW :—(a) On page 977 in second paragraph next to last line, the word "necessity" should be *necessities*; (b) In line 5, page 980, "dairymen" should be *dairyman*; (c) The apostrophe over "cow's" in line 2, paragraph 2, page 982, should have been omitted and a comma placed after *cows*. April REVIEW :—(a) Page 11, paragraph 5, line 5, "33 per cent." should be *3.3 per cent.* of casein and albumine; (b) Page 15, in third line of "Test for Formalin," the word "race" should have been *trace*; (c) The quotation marks enclosing the heading "How to Examine Milk," page 11, are unnecessary ; the same applies to heading "Preventive Inspection," page 16.

DR. KOCH DISPROVED BY A HIGH AUTHORITY.—The following dispatch was published in the press of the country as the REVIEW went to press : "Berlin, April 30.—Advance sheets of Professor Behring's forthcoming book on tuberculosis in cattle were available here to-day. From these sheets it is seen that in his book the professor details the results of six years' investigations assisted by Drs. Ruppel and Roemer. Professor Behring affirms that tuberculosis in man and cattle is propagated by identical bacilli, and that the seeming differences between the

human and the cattle bacilli result from the capacity of the bacilli to accommodate themselves to the organism in which they live. The writer explains the process by which he reaches the conclusion that chemically and physiologically, the tubercle bacilli in man and cattle are of the same species. Professor Behring says he has successfully infected cattle with virus from humans, producing thereby fatal animal tuberculosis. He also says he has discovered a method to render cattle immune against tuberculosis, which is done by vaccinating them when young. This he declares to be his greatest discovery, and says the method is already in use. He alluded to this method of inoculating cattle in his speech at Stockholm, when awarded one of the Nobel prizes."

AN AMERICAN VETERINARIAN UNDER A TROPICAL SUN.—Although we are violating the confidence of a valued collaborator of the REVIEW, we could not resist the impulse to reproduce the accompanying photo, forwarded to us as a private



token of remembrance by Dr. Olof Schwarzkopf, of the Third U. S. Cavalry, located at Vigan, Luzon, P. I. He has so many friends in America, and particularly among REVIEW readers, that we know they will enjoy a glimpse of the genial veterinarian fondly caressing his trusty pony, who appears to be about the size of an ordinary yearling. He reports that, although he suffered greatly from the tropical sun he is now doing well, and hopes soon to return to America.

REMOVAL OF GUNPOWDER STAINS.—On Christmas day a boy of twelve filled a vaseline bottle with powder and exploded

the same. I arrived on the scene about three hours after the accident and found the cornea and sclerotic of both eyes and the face literally blown full of powder. I removed a dozen or more flakes of powder from each cornea with a foreign spud; also removed the powder from the sclerotic. Did the operation under a four per cent. solution of cocaine. After the operation I used a fifteen per cent. solution of hydrozone in the eyes. After removing the particles of glass from the face I kept a cloth over it saturated with a fifty per cent. solution of hydrozone. At the end of two weeks I used a saturated solution of boric acid in the eyes and painted the face twice daily with equal parts of hydrozone and glycerin. The eyes are well and powder stains have disappeared from the face.—(Dr. E. G. Corbett, *Hampton, Fla.*, in *Medical World*, Feb., 1902.)

NOT AN UNCOMMON INCIDENT.—It was on a Vanderbilt Avenue [Brooklyn] car, and the sympathies of the passengers were keenly aroused by the evident suffering of a fashionably dressed woman revealed in an audible conversation with her equally stylish companion. Said the latter: "Oh, my dear, I am so grieved to hear of your trouble! Is there nothing you can do for him?" "Isn't it dreadful?" replied the first. "He is so ill, and we have tried every remedy. It breaks my heart. You know, last year we thought a change of air would benefit him, so we found an ideal place to spend the summer, and it seemed as if he must get well. Such delicious atmosphere, rippling water and cool, green grass." "And didn't he improve?" "No, poor fellow, and we don't know what to do. We are going to pack up very early this year and go away about May 1, but I am so afraid it will be of no use." "My dear," advised the first speaker, "why do you not consult Dr. ——, of New York? He's an authority on just such troubles, and I feel sure he could help him." "Perhaps. It's the only thing to do. We seem to have tried everything else. Oh!" with a little sob, "I don't believe I could bear it if he should die." By this time the listening passengers were almost in tears, so acute was the sorrow of the poor lady. It was pitiful. Her companion, too, was equally affected. "My dear," she exclaimed, "will you let me speak quite frankly and tell you what I think is the cause of the whole trouble?" The other nodded sadly, and she continued impressively: "I am afraid you give him bones. Now, we never give Dewey bones, and he's the healthiest dog in the city."—But the passengers had fled.—(*New York Herald*.)

PUBLISHERS' DEPARTMENT.

Subscription price, \$3 per annum, invariably in advance; foreign countries, \$3.60; students while attending college, \$2; single copies, 25 cents.

Rejected manuscripts will not be returned unless postage is forwarded.

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Alex. Eger, 34 East Van Buren St., Chicago, Ill., Veterinary Publisher and dealer in Veterinary Instruments, Books, and Drugs, is the authorized agent for the REVIEW in Chicago and the Middle West, and will receive subscriptions and advertisements at publishers' rates.

WE would call the attention of REVIEW readers to the contents of the library of the late Dr. Thomas F. Barron, of Baltimore, listed on page 14 (ad. dept.) of this number. It will be seen to be an interesting list of books, as what are not modern and up to date are sufficiently old and rare to make them attractive, and we would advise any of our friends desiring any part of this library to apply for them at once, as Mrs. Barron intends selling them without delay.

IT is said by those in a position to know by practical experience that the most perfect and simple method of practising artificial impregnation in the mare is by conveying the seminal fluid to the uterus in a *gelatine capsule*, which is filled in the vagina of them en route to the uterus, the mare having been previously served by the stallion. The strong little *one ounce rectal capsule*, made by H. Planten & Sons, were used in the demonstrations, from which impregnation was accomplished.

THOSE veterinarians who have not yet employed Epicarin-Veterinary as a dermal parasiticide have missed one of the "good things" in veterinary practice. They can obtain it and many other excellent pharmaceutical products not found elsewhere, from *Farbenfabriken of Elberfeld Co.* (see ad. dept.)

"A STITCH IN TIME" has been the secret of success in many undertakings; but it has reached the "climax" when in "the Consolidated Hoof Pad Co.'s" "Rubber Horse-Shoe Pad."

WE wonder if the veterinary profession fully appreciates the variety and value of the Buntin Drug Co.'s long list of veterinary hypodermic tablets.

REVIEWS WANTED.

The Publishers will pay 25c. a piece for April, 1901, and September, 1898. Also any one having any of the following numbers will kindly communicate with us before sending, as only a limited number are wanted of each. April, June, July and December, 1899, and January, 1900, also March, 1896. Address, Robert W. Ellis, D. V. S., No. 509 W. 152d Street, New York.

POSITION WANTED AS ASSISTANT.

By an M. R. C. V. S., with two years' experience in mixed practice. Good references as to ability and character. Address, F. C., 336 Fairmount Ave., Jersey City Heights, N. J.

AMERICAN VETERINARY REVIEW.

JUNE, 1902.

All communications for publication or in reference thereto should be addressed to Prof. Roscoe R. Bell, Seventh Ave. & Union St., Borough of Brooklyn, New York City.

EDITORIAL.

EUROPEAN CHRONICLES.

With the best intentions, one does not always succeed in reaching the object he has in view. Some months ago, being present at one of the meetings of the Société Centrale, I read a communication upon various methods used by American veterinarians in performing operations—neurectomy standing up, dentistry, etc., etc. This article drew quite earnest attention, and, of course, I was tempted to try again, but, indeed, my dear Prof. Williams, I do not know if I did right—at any rate, if I did not, you must take the good intention for the deed.

Here is the explanation :

Having read your articles in the REVIEW on "Neurectomy of the fifth pair," and the results that you have obtained, considering the silence that our colleagues of America were keeping about it, and, also (I might as well acknowledge it), desiring to introduce in France a new (as far as my knowledge goes) operation essentially American in its application, I wrote a short article, which I insert further, and read it before an audience where several strictly practical veterinarians were present. Was it that my article failed in its value? Did I not succeed in giving the subject the importance it has? Was I weak in my remarks? I do not know, but I must confess that the subject failed to draw any remarks or raise a discussion. After the meeting, I spoke of my disappointment to a few intimates, and was told that I was misjudging the effect, that the subject was most interesting; but (there are always buts, you know) that

it was altogether new, that the disease had never been observed, and that certainly my article would draw attention to it and that at the first opportunity they would try the American treatment. More than that, Prof. Almy, the learned young teacher who occupies the chair of practical surgery at Alfort, has promised me to introduce the operation among the exercises of his course.

That is what I have gained.

It may not be a great result, and yet I feel that I have obtained something, and advanced one step the standing of American veterinary practice and surgery in France, which, after all, is not to be sneered at.

Here is my article :—

"Tic of the Superior Maxillary Nerve."

"GENTLEMEN :—Some time ago you kindly gave me your attention in relation to some operations performed in the United States. But, after all, my remarks were only upon European operations modified by our colleagues on the other side of the Atlantic.

"To-day allow me to speak to you of an operation, which I believe is of American origin, which, so far, I have failed to find mentioned in any of the works I can read, and that Prof. Williams, of the New York State Veterinary College, at Cornell University, has been first to perform. However, it is almost in his name that I make this communication before our French colleagues to obtain their opinion.

"For myself, I never performed it, and am only familiar with the symptoms presented by animals for which Prof. Williams recommends it.

"Here is the diseased condition I have observed : The malady progresses insidiously and by degrees so as to reach its maximum of intensity. It is characterized only by one symptom, an up-and-down jerking of the head. At first a single indication of the trouble is observed, shaking more or less marked of the head up and down. The animal acts as if it was annoyed by flies around the eyes or the nose ; it rubs the upper lip, the

end of the nose, on the surrounding objects, or shakes its head rapidly. Sometimes it is obliged to stop, as if the irritation was too annoying to allow him to keep up moving. Observed principally when the animal is ridden or in harness, the symptom is less marked when it is in the stable. In some cases it is more developed when the animal goes against the wind ; it is also increased when the gait is quickened. This jerking of the head varies in severity, and is more or less marked according to individuals ; but it can always be made to appear at will, by having the animal put in motion, mounted or driven.

" The movements of the head are peculiar and almost diagnostical. Suddenly the animal jerks its head, its nose is of a sudden carried forward, then drawn backwards and upwards, and if an object is handy it rubs with rage the upper lip or the nose as if it wanted to free itself of an insect which causes severe and acute pain. If the animal is driven double it rubs against the pole ; if the access is severe it suddenly stops, turns the head towards its mate, rubs its nose against the collar or on the harness. In some cases the seat of the irritation seems to be at the top of the head or on the ears. These are the seat of rapid movements ; the head is shaken up and down, from one side to the other, and sometimes the pain is such that the animal becomes very irritable, sometimes uncontrollable.

" This peculiar condition has been observed in young animals and in adults, in well-bred horses, in those in good condition, well fed and strong, and doing light and moderate work.

" In all, repeated and close examinations of the nose, ears, mouth, teeth and pole of the head give only negative results.

" For my part, I remember that several years ago I saw three cases which presented the symptoms I have just described, and that I have never been able to account for their troubles or give them any relief.

" Prof. Williams has seen similar cases, and having considered them as of neuralgic nature, he has decided to resort to neurectomy of the infra-orbital portion of the superior maxillary nerve. It is a simple operation. The horse is cast, the operator feels

for the inferior opening of the superior maxillo-dental canal by pushing the mass of the sus-maxillo-labial muscle from up downwards ; he makes an incision from above below just over the nerve, cutting the skin and the sus-naso-labial muscle. The edges of the wound are kept apart by assistants. The nerve is isolated with care at its exit from the canal, is divided, and a piece, three centimeters in length, is removed, carefully removing all its divisions and avoiding the glosso-facial blood-vessels. The wound is dressed antiseptically. The horse is turned over and operated on the other side.

"To this date, Prof. Williams has operated on four horses. Three have recovered immediately without return of the symptoms. In the fourth there was only improvement. In three cases the nerve was hypertrophied in a marked manner. In the other, on the contrary, it was atrophied."

* * *

ONE of the most amusing events connected with veterinary sanitary organization in France has just occurred in one of the departments of that country, where it is said that her administration is envied by the whole world. I refer to a strike among a new class of governmental appointees, a strike which, no doubt, constitutes a record, not only in the history of sanitary medicine, but in that of all strikes, a strike which, even in America, where those outbursts of dissatisfaction are rather frequent, would never have been thought of, and, in fact, could never take place, thanks to the admirable manner in which the sanitary service is organized.

The strike of the Sanitary Veterinarians of Saone et Loire will certainly appear very funny in the United States, but, after all, it is proper that it should have taken place.

Veterinarians in many parts of the French territory have no official position. Yet, they are obliged to report all cases of contagious diseases which may come across their path in practice, and then the authorities may delegate them with an order to apply the laws as the case may be. Their services are generally paid by special funds. In the department in question, it

seems that no provision had been made for those expenses, and the results are that by a new regulation a special proviso had to be made. This provides for a fee of 1 franc (20 cents) for each visit, with an additional 0.50 centimes (10 cents) for visits made at a distance of 6 kilometers. Said additional fee to be paid only for going, but not returning. As about two visits only could be made in one day, the pay for that day's work would be about 3 francs (60 cents). As our friend Pion, of the *Simaïne Vétérinaire*, says : "Veterinarians would do better by going out breaking stones on the road."

Of course, this event is one exception, and will be remedied at short notice, but any how it is amusing, and one may now look for other strikes in other so-called liberal professions. Which will break that record ?

A. L.

QUACKERY EXTENDING IN NEW YORK STATE.

What a travesty upon veterinary progress and common justice is presented by the breach of the law in this State ! When one reads the statute referring to the regulation of the practice of veterinary medicine and surgery and then becomes in possession of a knowledge of the real state of affairs, he can but feel that, adequate and wise as are our laws, they are absolutely ineffective when administered as at present. The REVIEW has called the attention of the profession of the State to this subject upon various occasions, and it purposes doing so more frequently and persistently in the future, until some definite steps are taken to remedy an evil which is eating very vigorously at the heart of professional progress. Private information from many sections of the State indicates that men with no qualifications as veterinarians, endowed only with an audacity that is beyond comprehension, have become so emboldened by freedom from molestation that they hesitate not to announce themselves as "veterinary surgeons" and to undertake the treatment of domestic animals just as though they possessed the legal and the moral right to do so.

While it is probable that the amount and character of busi-

ness done by this class of imposters is of little injury to the legitimate members of the profession, they bring the honorable and qualified practitioners into disrepute, discrediting the efforts of men who are laboring earnestly for the elevation of their calling, and destroying the influence and prestige of a profession which has reached its present high place among the learned sciences by the devoted efforts and examples of men for whom the laws were placed on the statute-books.

Aside from this aspect of the case, it is a disgraceful mockery of the integrity of our laws, when they can be violated with such impunity by the outlaws of society.

What is the remedy?

Can the State Society find a better channel in which to exert its power and its energies? If we do not protect ourselves, we can scarcely expect others to do so. A prosecuting committee is a farce; men cannot give up their time and travel over the State to press such cases without pay. But the veterinarians of the State, through their representative organization, can start a fund and employ an energetic, honest lawyer, paid a sufficient sum to justify his best efforts, whose duty it shall be to go to any point in the State where evidence has been secured and prosecute a violator of the law. The REVIEW will start this fund by subscribing twenty-five (\$25) dollars, and will add more if necessary. The fines—half of which goes to the party securing the conviction—will defray much of the expense.

Will the State Society take this question up at its next meeting, and throw behind it some real energy, and not sidetrack the question by appointing an impossible committee?

Or will the matter be allowed to drag along as for the past five or six years, exacting the most stringent fulfillment of the Regents' laws by the graduates of her schools, but permitting the most ignorant charlatan to bask in the sunlight of freedom from molestation? How can the profession of the State ask the legislature for any new law when it neglects *in toto* to maintain and uphold those which it has given us?

Isn't there some food for reflection in the above facts?

THE VETERINARY BENEFIT AND PROTECTIVE ASSOCIATION.

In "European Chronicles," the medium through which the senior editor of the REVIEW transmits to his readers his impressions of the events which go to make up the onward-march of the rapidly-developing science of comparative medicine, he has on more occasions than one referred to that aspect of the profession which in other callings, and even in that of veterinary medicine in some countries, is deserving of due consideration by American veterinarians. It is not infrequent that in a business which is rated by the insurance people as "extra-hazardous" that a veterinarian is disabled for weeks and even months by an accident which incapacitates him for any duty; or by disease, the result of infection from a patient, or through the natural penalties of human existence; or in case such accident or disease is sufficiently severe to terminate his life, then the question of the means for immediate necessities imposes itself upon him or those whom he may leave helpless behind him. All professions, trades, and businesses have their mutual aid associations, through which, by the annual payment of a small premium, a certain sum is guaranteed to each member in case of disability or death.

Without going into the details of such organizations, which are probably well understood by our readers, and which have been more thoroughly considered by Dr. Liautard, we wish to call the attention of the members of the American Veterinary Medical Association, upon the eve of their annual meeting, to the advisability of establishing such an organization in this country. The first steps could be taken at Minneapolis toward the founding of such an association, and officers could be selected to operate under the guidance of trustees. We have but little doubt that it would find immediate favor among such a large body of intelligent men as constitute the profession in America, and that it would be of incalculable benefit to its members need not be doubted, as we have many examples of the benign effect of such undertakings in all walks of life.

ORIGINAL ARTICLES.

THE LIVING AND THE DEAD :

REMINISCENCES OF THE VETERINARY PRACTITIONERS OF FORTY
YEARS AGO.

BY ONE OF THEM.

In the early sixties veterinary surgeons who had acquired the right to be called such by reason of special study were almost as rare as electricians, and the few who were located in this country—mostly graduates of the Royal College of England—naturally achieved national reputations. Even men who lacked diplomas but through genius became widely known, were in possession of large practices, and their fame extended far and near:

There are very few of the men of those days now living; but one of them has at our solicitation prepared for REVIEW readers some reminiscences of the personal characteristics and anecdotes of the men who may be said to constitute the "old guard" of the American veterinary profession. Three Eastern States—Massachusetts, New York, and Pennsylvania—were the veterinary centres, and when the early history of those sections is written the veterinary story of the whole country will have been told.

If the roll of those who were prominent on the stage at the outbreak of the Civil War were called, there would be very few to answer, and so it will not require a great effort on the part of the reader to guess the name of the one who conceals his identity under the pseudonyme of "One of Them."

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A. S. COPEMAN, V. S.

A. S. Copeman, not a regular graduate, was one of the most

deserving men engaged in veterinary medicine at that time. Of English origin, I believe, he was a hard student and practiced his profession at Utica, N. Y., for many years. In 1864 he was called to New York City to enter the faculty of the New York College of Veterinary Surgeons, where he held the chair of Theory and Practice for two or three years. He had already received an appointment in the attempt made in 1855 to organize the Boston Veterinary Institute—the chair of Chemistry and Pharainacy.* Mr. Copeiman was rather a slim-built man, of very affable manners (perhaps too much so), and of a nature or character which did not give him many friends, although he had much desire to have many. Hard worker, lover of the microscope, fluent writer, he was one of the first to start the practice of gratuitous prescribing through the columns of sporting papers, and in that capacity occupied for some seven years the position of Veterinary Editor of *Wilkes' Spirit of the Times*.

After leaving the professorship at the N. Y. C. V. S., he devoted himself to private practice in New York City. His relations with the paper he edited as veterinarian and his writings were the means by which he soon commanded a large and lucrative practice, through which he became wealthy. But this he was not able to hold towards the last of his life. He had family troubles, which brought on him nervous manifestations, from which he suffered severely, and during his attacks he had often expressed the wish to die. One day in November, 1876, he hurried through his office in the basement of his house, walked up stairs to his bedroom on the second story, put the muzzle of a revolver into his mouth and shot himself dead.

Mr. Copeiman was also one of the organizers of the United States Veterinary Medical Association, and one of its first presidents. Of the few intimate friends he had, Grice was one, and it was peculiar to see the attachment that existed between two men so different in every thing, but specially so much in the point of irreproachable professional ethics.

* AMERICAN VETERINARY REVIEW, Vol. I. Appendix, page 8.

An amusing incident proves this. One day he was called to examine a horse as to soundness, and the parties interested in the trade were desirous that the examination should please both buyer and seller. The horse was then examined, and the following written as to conclusion on "Certificate 2056:" ". . . I find the said horse to the best of my judgment sound. With a view to identification I observe that the above mentioned animal has a splint, a small curb and an exostosis on the near hind hock joint." Evidently the certificate, which is now in our hands, having been handed to us by the purchaser, had been written to please the buyer, who thought the animal sound, and the dealer, who could claim afterwards that he had bought the animal knowingly with his unsoundness.

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R. H. CURTIS, M. R. C. V. S. L.

When I knew him, Mr. Curtis was already advanced in years.

Graduate of the Royal College of Veterinary Surgeons at the time when English veterinary graduates were distinguishing their *alma mater* by an initial after their title of membership of the Royal College of Veterinary Surgeons, he was an M. R. C. V. S. L. (of London), to distinguish him from M. R. C. V. S. E. (of Edinburg).

By what force of destiny he came to America I am ignorant of; but at any rate he was in 1860 practicing in Brooklyn, in that part which then was called the Heights. Keeping up a small but select practice, he had also sufficient time left to him to run a riding school, a thing which in those days was peculiar, as horseback riding was only in its infancy in that part of the State, and had not assumed the proportions it has to-day.

Curtis was a very kind, genuine gentleman, English in general appearance, and whose grand object in life then was the professional success of his adopted son, Dr. A. Large, who, I believe, about that time was just returning to America after having graduated at the *alma mater* of his uncle.

Curtis was present at the organization meeting of the U. S. V. M. A., one of the first to sign the constitution, and also one of its first presidents. He died at quite an old age.

His general condition of health and his advanced age did not prevent him from attending to the duties that his membership or his official position in the association demanded of him, or if he missed the gatherings (meetings which then were held in New York or in Boston) it was only on account of ill health, and still several times have I seen him go to the semi-annual meeting in Massachusetts, where his congenial conversation and friendly disposition rendered the trip in winter most pleasant.

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O. H. FLAGG, M.D., V.S.

How simple and how becoming to the known modesty of O. H. Flagg, the few remarks made in the professional journals upon the death of this good man and honest practitioner, who deserved more, however, for he, with a few more of the profession in the Eastern States, form a little troop which were doing all they could to uphold the flag of veterinary science.

We made his acquaintance in the halls of the Astor House. He had seen a good move to elevate the profession to which he belonged, and, of course, he was on hand.

Flagg was tall, slim, and very unassuming, yet a deep thinker. Present at all the meetings of the U. S. V. M. A., he, however, seldom took part in the discussions, but when he did, he was always sure to carry his point, and his opinion was almost always sure to win.* He was most congenial and good hearted, talking slow in a low tone of voice, and was only touchy on one point, that of his being a regular graduate of veterinary medicine.

True, he had the degree of M. D., but for many among us the regularity of his claim to the V. S. was a matter of doubt; the school he claimed for his *alma mater* having had but a doubtful existence.† No doubt he keenly felt his position;

*AM. VET. REVIEW, page 814, Vol. XX.

† AM. VET. REVIEW, Vol. I., Appendix, page 8. R. S. Huidekoper.

nevertheless, he was always welcome among all the other members of the profession, and it was always with great pleasure that we would look for him at our meetings.

In New Bedford, where he practiced for many years, he was highly considered, and although his professional life was quiet, he did a great amount of good work, which will probably always remain unknown, as from his modesty he has deprived the profession of any writings he might have given her.

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C. C. GRICE, M. R. C. V. S. L.

C. C. Grice graduated at the Royal Veterinary College of England in 1826, and came to America in 1830. He opened an office in Pearl Street, New York City, where a fair beginning was made after much labor, patient waiting and perseverance. After a few years he removed to White Street, where he remained about fourteen years, thence he removed to his last residence, 122 Macdougal Street. "Mr. Grice was a man of great energy and industry in his profession. He was a critical pathologist, good anatomist and skillful surgeon. He wielded the knife with great dexterity and skill, and performed many heroic as well as delicate operations. His integrity was of the sterling kind and no inducements could allure him from the path of strict duty or cause him to lower the profession which he so delighted to honor." *

In 1860 he was already quite an old man; small, very small in stature, quick and very nervous. He was as conceited as he could be—"an Englishman and a graduate." At that time he had a very large practice, rather selected, and among his patrons he could name some celebrated men of those days: James Gordon Bennett, Sr., Hoyt, Astors, and among medical men Dr. Valentine Mott, David Hosack, and many others. Although he had been considered of a superior talent he did not deserve his reputation, but, yet, having good knowledge of his profession, he knew how to apply himself. Some little amusing

* *New York Times*, July, 1876.

events of his life were known by many of his colleagues, for whom he had little affection.

Quite a small man, he had married a fine, strong and corpulent English lady, whose goodness was as big as her heart, which was known to and appreciated by all who visited her. She was tyrannical at home in her way, but to her friends she was personified kindness. A professional friend of Grice, and all the veterinarians who knew him, used to repeat a story on the tyrannic lady who, according to Wood, "wore the pants" in the matrimonial contract. One day when Wood was visiting New York he had succeeded in taking Grice with him in some good honest frolic, as he liked to indulge in when visiting this great metropolis.

The little débauche went on gay and full of laughs and fun late into the night, or rather in the early morning. At the beginning, Grice was all happy and gay, but as the hours passed by and after the bills were paid, his gaiety subsided by degree and he seemed to be hesitating, when in going back home he heard the clock of a close by tower indicate that it was no longer night. At last they reached Macdougal Street ; Grice opened the door with as little noise as possible, but he had not been careful enough ; it flew easily open, and the sight of the good old wife waiting for the *débauché* appeared in her spotless white night gown. "Oh, pardon me, pardon me, Jane, I'll never do it again," exclaimed Grice, as he threw himself on his knees on the floor. Wood never missed an opportunity to tell that story whenever in the company of other veterinarians, and his hearty laugh told much about the queer and funny effect of the scene. It must be said, however, that if Jane pardoned Charles, there was for some reason or another no further friendship between the two veterinarians.

Yes, Grice was very nervous, and also very conceited. It was an easy matter to make him lose his temper. One day he was subpoenaed as an expert in a horse case. One of the lawyers depended much on his testimony ; in fact, the whole case did. Grice, all dressed up, was walking up and down the hall room

of the court, brandishing a little cane with which he sometimes nervously stroked his own legs in walking. Called to the stand, he marched quickly, was sworn in and he sat down. His testimony went on smoothly while he was questioned by the lawyer who had subpoenaed him. Grice then was all grace and smiling : but afterwards came the counsel of the opposite side. From the start the storm grew serious. In those days lawyers had little respect for witnesses, and as question went upon question to Grice, as to his age, his qualifications, his knowledge of the case, etc., etc., the suffering little man grew more and more nervous, more and more agitated ; he twisted and twisted on his seat ; his answers became confused ; he lost the current of the subject ; the strain was too much ; he broke down literally, and, jumping to his feet, he left the stand furious, brandishing his little cane towards the author of his woes, claiming as loud as he could : " Yes, sir, I am a veterinary surgeon. I have been for nearly a quarter of a century in practice and I know . . ." his last words were covered by the laughing of the people in court. However, the testimony he had given in behalf of his client carried the case in his favor.

It has been written that he was a skilful surgeon and that he performed all kinds of operations with skill and dexterity. Was this reputation deserved ? Was he the great operator he may have thought himself to be ?

One day he had a very interesting case to which he had conveyed a friend of his to witness. It was that of an enormous champignon, fully as big as a man's head ; half of it was protruding, raw and bleeding, while the other was covered with the skin, intact and without fistulous openings or discharge —a beautiful specimen of extra-intra-scrotal champignon. In those days surgical interference was the only thing to resort to. It was indeed a handsome case to operate on, and the invited friend was anticipating the great surgical treat of a fine dissection, when—oh ! horror !—after the animal had been secured and that firmly, without any possible chance of struggling or fear of accident, the protruding half of the mass was

amputated, piece by piece, slice by slice, as far back as the edges of the skin ; several actual cauteries were passed over the bleeding surface, where the haemorrhage was quite abundant, and then the horse was loosened and allowed to go. No further treatment was ordered. The friend, who was a veterinarian, went away also, saying nothing, but thinking no less.

Grice was proud of his profession, but specially also of everything in the profession which would give prominence at little expense. At the organization of the New York College of Veterinary Surgeons he was appointed one of the censors ; of this title he made much, and represented himself often as one of the founders of the college. His duties as censor, however, were very limited. He never did anything for the institution to which his name was attached.*

C. C. Grice lived to a very old age ; he kept practicing nearly to the end, and a few of us may remember him driving a small low four-wheeled doctor's phæton, without top, pulled by a small, fat, hollow-backed pony, quite as quick and nervous as the old gentleman. A small man, seated in a small wagon, driven by a small horse ; had not Grice been known full of etiquette, his whole turnout might have been considered as an advertising dodge ; but it was not.

Although one of the veterinarians of reputation at the time of the organization of the United States Veterinary Medical Association, Grice did not attend the meeting at the Astor House. Those who went there were not good enough for him. His conceit kept him away at first, but his dislike for many of the members did not let him join it afterwards. In fact, he never joined any association. The only position he ever had which might indicate his kind feelings toward the rising profession in America was that which he occupied at the New York College of Veterinary Surgeons—Censor—a title only, as no work of any kind was ever done by any of the three gentlemen who composed the board.

*AM. VET. REV. Vol. I. Appendix, pages 9 and 10.
(To be continued.)

VAGINAL OVARIOTOMY.

BY H. FULSTOW, V. S., NORWALK, OHIO.

Read before the Ohio State Veterinary Medical Association, Jan. 14th, 1902.

I was requested by our worthy Secretary to prepare a paper on "Ovariotomy in the Mare." Every veterinary surgeon who is in active practice, runs across more or less animals where the operation would be beneficial both to owner and animal; besides building up a reputation for the practitioner himself, and greatly helping to fill one corner of his empty pocket book. This operation is indicated in ovarian diseases, such as tumors or dropsy of that organ, and especially in nymphomania or cestrumania. Such animals are generally a source of great annoyance to their owners and every one who has anything to do with them. They are ticklish and excitable, when anything touches them they squeal, switch and urinate or kick. They appear to be in heat nearly all the time, but generally fail to breed. I shall not go into the anatomy of the organs and their annexes, as everyone here is as familiar with the parts as I am. I shall simply give you the history of a few cases that have come under my personal observation in the last year or two.

Case 1.—Black mare, 15.2, six years old, sound, with good style and a grand individual. This mare was a good, kind animal when not in heat, but when in heat she would squeal, switch, and kick, especially when meeting teams in the road, and finally got so bad that it was not safe to hitch her during that period. She was operated upon Oct. 19, 1900, by Dr. Holland, of Wellington, O., and myself; after operation she showed slight colicky pains and wanted to lie down, but was blanketed and kept walking for about half an hour, when she appeared free from pain. She was then placed in a clean comfortable box-stall, well littered with straw, and immediately laid down and appeared sick, but did not roll. She was watched all night, but was free from colicky pains; took a few swallows of chilled water, but ate nothing until morning, when she took a fair feed of cooked oats and bran. Temperature 101.4; she

appeared quite bright, picked around some all day, but was fed nothing but cooked food. Oct. 21st, temperature 100.4, patient bright and ready to eat any time. Just one week after operation she was taken home, a distance of $2\frac{1}{2}$ miles, was hitched next day and has been driven and worked ever since. This mare now is as quiet as a gelding, and the owner's wife drives her anywhere.

Case II.—Grey mare, 7 years old, 16 hands high, pacer and quite speedy. This was a good clever mare until the summer she was four years old; one day while in heat she kicked a cart all to pieces and from that time on she was a bad one; would switch, kick, and urinate all the time while in harness, and finally got so bad it was not safe to go into the stall beside her, and she appeared to be in heat nearly all the time. I advised breeding, which was done, and a nice filly was raised from her; she was bred again the following year several times, but she failed to get in foal, so her owner tried working her on the farm, but she was as bad at her old tricks as ever, and he got utterly disgusted and traded her off to my neighbor, who runs a feed barn and deals some in horses. He kept her about one week and hitched her twice to a long-shafted breaking cart, with a rope across her rump to keep her from demolishing everything.

I advised him to have her spayed, but he was afraid of the risk, so I traded for her. I put her in a box stall and gave her a good scalded bran mash three times daily for three days, with $\frac{1}{2}$ oz. hyposulphite of soda in each mash; then I starved her for twenty-four hours and gave her the $\frac{1}{2}$ oz. doses of hypo. in a little water three times daily before operating upon her.

She was spayed May 28, 1901. After operation she appeared quite uneasy, so was blanketed and kept walking for some time; then was placed in a comfortable box stall, same as No. 1, where she at once laid down with her head between her fore legs, and appeared sick, but did not roll or thrash around, and was watched until midnight, when my man thought it unnecessary to watch her longer. She took a little chilled water, but ate

nothing until next morning, when she took her feed of cooked oats and bran.

Morning of 29th, pulse 40, tem. 101.3; she strained some when her bowels moved, so I gave her an enema three times daily of luke-warm water. She appeared quite bright all day and picked around. At evening, pulse 40, tem. 101. May 30, 8 A. M., pulse 34, tem. 100.3. At 6 P. M., pulse 42, tem. 101. May 31, 8 A. M., pulse 36, tem. 100.3; 6 P. M., pulse 36, tem. 101. June 1, 8 A. M., pulse 36, tem. 100; 6 P. M., pulse 36, tem. 100.

I hitched this mare June 15 without kicking strap, and made a call, about a quarter of a mile from my office. She appeared clever, and I have driven her right along in my practice from that day until now. She is perfectly gentle everywhere, and I take my wife and family out behind her at any time.

Oct. 29, while making a call in the country, and driving along at a good fair clip, she became frightened at some dump boards piled beside the road, and suddenly stopped, breaking the outside belly band, and letting the cross-bar of the buggy run right onto her, but she never did a thing, not as much as switch her tail. I think it quite remarkable, knowing as I do the disposition of the mare before she was operated upon.

Case III.—Black mare, 9 years old, belonging to a neighbor of the first case; having watched her since the operation, he finally decided to have his operated upon. She was in season most of the time; would kick and urinate in the barn while going about her, and could hardly be harnessed at all; did not kick when hitched, but switched and urinated. She was operated on July 1st, 1901. This mare was not as uneasy after the operation as the other two, so was blanketed and walked home a few blocks away, and was put in a good clean box stall, where she immediately laid down with her head between her fore legs and appeared sick like the others, and was watched for some time; she took a few swallows of water, but ate nothing that night. Next morning she appeared bright, tem. 101,

took a good scalded feed and picked around all day. July 3, tem. 100.4, eating well, and appeared free from pain. This mare was hitched and driven the ninth day after being operated upon, and is as gentle in and out of the barn as any horse could be.

Precautions to be Observed Before Operating.—Examine your animal carefully and see that it is not suffering from any contagious disease, and is otherwise healthy. If fevered up with grain it is a good plan to grass or mash it out for a few days, but if in a debilitated condition try to get it built up some before you attempt to operate. An animal to be operated upon ought to be in the pink of condition, ready to do a good hard day's work.

Modus Operandi.—Place the animal in stocks; empty out the rectum and bladder; scrub the tail and external parts with soap and then with a solution of bichloride of mercury, 1-1000, wash out the vagina with a solution of soda, 6 per cent., and see that it is perfectly clean; wind a linen bandage around the tail and have an assistant to hold it out of your way. Have your instruments thoroughly sterilized, and place them in an anti-septic solution. Scrub your hands and arms with soap and water, then wash them in bichloride solution.

Instruments Needed.—One guarded knife and spaying ecraseur, long.

After getting your animal ready, take your hidden bistouri in your right hand and pass it into the vagina, open it and make a single puncture through the upper part of the vagina, just above the os, then close the knife and withdraw it. Now introduce your arm again into the vagina, put the index finger into the wound, then the middle finger, then the thumb, and spread fingers as much as possible, tearing the wall of the vagina until the hand can penetrate into the abdominal cavity. Then locate the left ovary, and after finding it have an assistant enter your ecraseur for you; place the chain over it and crush it off slowly, taking care to hold on to the ovary until you bring it outside the vagina. Take your left hand for the right

ovary and proceed as before, always remembering to hold on to the ovary so as not to let it drop into the abdominal cavity. After you are through operating, sponge off external parts with bichloride solution, and release the animal from the stocks, blanket well, and keep walking until it is cooled off, then place in a comfortable box stall and watch it for some time. Feed carefully for several days on cooked oats and bran, and if any pain is evinced when the bowels move, give an enema occasionally of tepid water. Take pulse and temperature every day and treat any of the results as they may present themselves to you.

While I have not, perhaps, had as much experience as some others in ovariotomy, I have endeavored, as far as possible, to impart to you the knowledge I have gained of the habits before and after the operation, and to explain the course I have pursued in operating, and leave you to draw your own conclusions.

CLIPPING WORK HORSES.—The Michigan Experiment Station has just concluded a trial with clipped and unclipped work horses. In one instance one horse in each of three pairs was clipped and its mate allowed to shed its old coat when it got around to it. In another trial, as reported in the dispatches, one pair was clipped and another doing the same work was made to keep its long hair. Observations were taken at stated periods, but the results were not at all conclusive. Prof. Smith, who conducted the experiments, states that the horses which were clipped did their work in much greater comfort than those that were not, and that means a great deal. The appearance of the clipped animals also was considerably the best and the general results of the trials in favor of the use of the clippers is not definitely conclusive.

THE U. S. Government reports that there is no danger of the extinction of the buffalo. There is no evidence that any of these animal are running wild, but there are many large herds of them owned upon the ranges. The price of mature bull bisons is about \$375, cows and two-year-old heifers \$500, while calves bring equally high prices.

THE total value of live stock and its products exported by the United States in 1901 was \$250,000,000. This does not include pure-bred animals sent abroad.

TREATMENT OF AZOTURIA WITH POTASSIUM IODIDE.

BY T. S. CHILDS, V. S., SARATOGA SPRINGS, N. Y.

Since the publication of the article which I contributed to the REVIEW in 1900 upon the above subject, I have received many letters from veterinarians from all over the United States, asking in reference to the treatment, and for the information of these and any others who may be interested, I will give a report of a few cases of azoturia treated by me with kali iodide since that time.

I had 19 cases of azoturia in 1901 and 1902 up to date, the last case being Feb. 4th, 1902; this one we killed by order of the Division Superintendent of the Standard Oil Co. It was in a young green horse, four years old, weighing 1400 lbs. He was down; could not get up; was very fat, and my opinion is that he would have died no matter what was done for him, as I had given him kali iodide, $\frac{3}{4}$ iv, without the usual results. Still it seemed to give the animal great ease for a time.

The cases treated would be too numerous to give a full detailed account of all of them. So I will just give a few, so as to show the severity of the cases, and the results of the treatment.

Case I.—March 16, 1901, I was called to see a bay pacing mare used for a private carriage, owned by Mr. V. Moore; had been in stable for three or four days, and had been fed as usual. She was rather fat. She was hooked and driven about half a mile, when the driver found she was ailing and took her back to the stable. This case did not go down, but was very restless. I used the catheter and gave kali iodide, $\frac{3}{4}$ ss, in half a pint of water, and had hot packs placed over loins, as the gluteals were very hard and sore. Never saw mare again until three days afterwards, when I saw her out at her regular work all right.

Case II.—March 30, bay gelding, had been in stable for one week; drove seven miles to town; was taken with what was thought to be colic; was treated by two quacks, with hot water

enemas, and late at night I was called, but would not take case. This animal was owned by one of our local dentists, and as he started with quacks I thought I would let him stick to them. This case died, and the D.D.S. was very angry with me because I would not treat the horse.

Case III.—April 12, brown gelding, 1050 lbs., had been at very hard work all spring; was left in stable for three days for a rest; was fed as usual, and driven the third day to the village, about two miles, and was taken with colic, as the owner, Mr. F., said, as he had such an attack about a year before. I gave him colic medicine at that time and he came out all right; but in a very short time the owner changed his mind, when he saw the animal go down and could not rise. This case was treated for three days, but made a good recovery, and in a week was at his usual work, delivering milk. This case was down for about ten hours. I used hot packs, gave iodide of potassium, $\frac{3}{5}$ ss, in aqua Oss; drew urine, it was very black.

Case IV.—April 18, 1901, was called to see a brown mare, 1200 lbs., nine years old, used on the Armour Dressed Beef Co.'s wagon in Saratoga Springs. She had been in the stable for two days and fed just as usual; had her hooked to go to Ballston Spa, a distance of seven miles, and while loading the driver noticed her dropping down behind, and could not stand up on her hind legs, and was very lame in the forward shoulders. She was placed in stable with great difficulty and I was called; I was in court in Ballston Spa on a horse case, and Mr. V., the local manager, telephoned me the history of the case; and I made the usual diagnosis from the symptoms, and prescribed hot-packs and kali iodide, $\frac{3}{5}$ ss, in aqua Oss, at one dose. I was excused by the court, and went to Saratoga as soon as possible, and found my instructions had been carried out, and mare very quiet; had been down but could get up; later, as she showed uneasiness, I repeated the iodide and gave her $\frac{3}{5}$ ii every four hours. This horse resumed her regular work the second day. Did not use catheter, as she micturated properly.

Case V.—April 19, 1901, a case about as last, only it was a gray gelding. Treatment as above.

I could continue to describe a number of cases like the above, more or less serious.

I had a case of it in a bay trotting mare Thanksgiving Day, and in the same mare Christmas day, and it was the fourth case I had in two years for this same man. As the weather was bad he had not driven this mare for three or four days, and had her hooked to drive down to his farm. After going about two and a half miles he noticed the mare not being just right, but continued. I met him on the road and said he thought it was azoturia. He drove to his stables and that was all, as she was so stiff that she had to be helped to her stall. I was called and drew water, used the iodide in pill form, as she was hard to give liquids; drew water, which was very dark and thick. Did not apply hot packs, but used an ammonia liniment. She was well next day, excepting a terribly congested condition of the vulva owing to a smart stableman crowding a handful of salt up her vagina. Mr. L., the owner, was fitting her for a race, and gave her some hard work and banged her knee so she was laid up for three or four days. Her feed was supposed to be cut, but Christmas day he gave her a little exercise, but had gone about four city blocks when he at once noticed similar trouble to her last illness. Got her to stable and called me. I gave treatment as before. She was well and out the next day. This was a mild case, as she had never gone down, and the disease gave way to the treatment very quickly.

In some very bad cases I give $\frac{3}{4}$ ss to $\frac{3}{4}$ i of chloral hydrate, but, as a rule, I depend on the iodide. Now, I am only giving my experience with the drug in these cases.

On my annual vacation I visit my veterinary friends, and, of course, we exchange ideas, and I never fail to speak of the undesirable disease of azoturia, and two years ago I got all my friends to try it. They have done so, but all of them report very unfavorably. I do not understand how or why, unless I have a special kind of disease, or the atmosphere may have

something to do with it. Our air is very light and dry.

Dr. Thos. Bland, of Waterbury, Conn., condemns it, and claims that the pathology of the disease is not understood. He says that he has had them die, no matter what he did for them, and he has had them get well no matter what he would do for them; but he says that he is going to try venesection and introduce a saline solution to take the place of the amount of blood he draws away, and report the results.

Dr. Kelly, of Waterbury, Conn., agrees with Dr. Bland, that the iodide is of little service as a curative treatment for azoturia.

Dr. J. H. Kelly, of New Haven, Conn., has lost faith in it, and does not depend on it as he did at one time, and a number of practitioners in New York tell me it is of no service in their hands.

Dr. Metcalf, of Albany, says he has had good results giving aloes and turpentine in small doses.

Dr. McWhinney, of Troy, pursues the old treatment—very large physic pills.

Dr. Shorey, of Mechanicsville, still sticks to kali iodide.

Dr. Marshall, of Greenwich, does not think it of any service in his hands.

Dr. Connelly, of Troy, treats as does Dr. McWhinney.

Dr. Kelly, of Albany, bleeds and physics; the more blood taken the less physic, and the less blood the more physic; he also thinks as Dr. Bland does, that the saline solution is the best way to treat the disease.

So it goes all up and down the line. I have talked with a great number of veterinarians and their treatment varies, and I must say I had poor success with the old way of treating the disease. I have had recoveries in thirty cases in about two years. I think I have only lost three cases out of thirty-three treated. One case was up and all over the disease, but got synovitis from beating his ankles. It was a very bad case in a very large horse. I had to kill him on account of the open joint. One other case was in an old horse and the owner would

not treat, so killed it; and the other was the one mentioned, Feb. 4, 1902.

So I have found kali iodide to be almost a specific in my hands, and shall, of course, continue to use it, irrespective of what any one says as long as I have good results. My experience has been that mares are more frequently affected than geldings, and young horses oftener than old ones. I have never had but one case in a stallion and that was the celebrated race-horse, "Sir Walter." He got well, and, by the way, that was the only race-horse I have ever seen the disease in. I attribute this to the care and watchfulness they get.

SMASHED THE AUTOMOBILIST.—Jeromus Rapelyea, of Newtown, L. I., a veteran of the Civil War and a hero of the battle of Fair Oaks, was arraigned before Magistrate Smith, at Flushing, L. I., yesterday on a charge of assaulting Henry V. R. Kennedy, of 169 West Ninety-ninth street, Manhattan. Mr. Rapelyea was formerly superintendent of the poor in Queens county. He is slightly lame owing to a wound received at Fair Oaks and is known all over Long Island as "Fair Oaks" Rapelyea. He is 67 years old and a veterinary surgeon. Thursday morning he was driving along the Hoffman boulevard, Newtown, accompanied by his granddaughter. When he was approaching an excavation in the highway that left room for only one vehicle to pass, Kennedy hove in sight in a big white automobile. He has a country place at Hempstead and was racing to the Hunter's Point ferry. Several persons say that Rapelyea was nearest the excavation and by the rules of the road had the right of way. They saw him wave his hand to Kennedy, but the automobilist paid no attention to the signal and came rushing along. Rapelyea had only time to back his horse up on the sidewalk to save the lives of himself and his grandchild. Rapelyea jumped out of his carriage and fired a lump of clay at the automobile. The missile struck Kennedy between the eyes. He stopped, and ascertaining the name of his assailant, secured a warrant for Rapelyea's arrest. The case was set down for May 28 and Rapelyea was paroled. Last night he received notice from wealthy farmers that they would subscribe all the money necessary to aid him in his fight against the automobilist.—(*N. Y. Sun, May 24*).

CÆSAREAN SECTION.

BY H. L. STEWART, M. D. C., LACONA, IA.

Read before the 14th Annual Meeting of the Iowa State Veterinary Medical Association,
Feb. 11 and 12, 1902.

Cæsarean section or gastrohisterotomy is an operation which has for its object the removal of the foetus or foetuses from the uterus of the parent when they cannot be removed in the natural way, and consists of making an opening through the abdominal wall and into the uterus for the purpose of such removal. This is quite a serious operation. It has been resorted to from a very early period in the human family, even in the day of Appollo and Julius Cæsar. Since these early times it has often been practiced upon women. When it was first attempted in veterinary practice is not exactly known, but it is thought to have been practiced by the Greek veterinarians at a very early date. Nothing definite is known of it until within the last century and a half, and it is not known to have been performed on the living animal until within less than a century. The operation is not frequently necessary on the mare and cow, and is less frequently successful on these animals. But on the smaller animals, especially swine, it is more successful. This is thought to be due to the attachment of the placenta to the uterus, which renders the animal less liable to septic infection through injury to the uterus. It is an operation which should be resorted to only in cases where the foetus is alive, and delivery by the natural passage is impossible, or so difficult or dangerous that the mother incurs as much risk as she would from the operation ; or where the owner prefers to save the offspring alive rather than incur the risk of losing both, the progeny being the more valuable ; or when there are fractures or exostoses of the pelvis which greatly diminish the canal ; or where there is protrusion of a large quantity of the bowels as in one case which I had, and in which the foal was promptly removed and saved, although no effort was made to save the mare ; or in extra-uterine pregnancy or torsion of the uterus. The operation is also

indicated where the animal is near the termination of pregnancy and is too sick to live, or injured so that recovery is impossible, or if the animal has just died or is dying. The foal soon perishes when it cannot be born, but the calf may live for some time varying from three minutes to a much longer time after the death of the mother. Puppies have been taken from the uterus alive eight or ten minutes after the death of the mother. Few cases are on record of successful gastrohisterotomy on cows and mares. But with the pig it is quite different. While the pig seems to be of little significance and an animal that the veterinary practitioner is seldom called to see, yet in these days of high values, when a hog is often worth from \$20 to \$30 or more, it is deserving of our attention.

In all cases where the operation is decided upon no time should be lost in practicing it if we wish to preserve the progeny and the mother. A clean and comfortable place should be selected. The animal should be placed on its right side and the left posterior limb fastened to something sufficient to hold it about level with the uppermost side of the patient. The hair should be clipped off over considerable space in the flank, or better clip the hair off before the animal is cast, if it can be done. The side should be well disinfected at the seat of operation. A solution of creolin is perhaps the best. From the beginning use all measures to prevent septic metritis, peritonitis or nervous exhaustion. With a scalpel make a liberal incision in the flank as for ovariotomy, but make it longer. Twist all bleeding vessels and then open the peritoneum. Then with the hand reach in through the opening which has been made and grasp one horn of the uterus and bring it with its contents through the incision to the outside, as it is impossible to prevent the escape of the liquor amnii and small particles of placenta into the abdominal cavity if the uterus is left in the abdomen while the contents is being removed. The incision into the uterus should be made when practicable between two pigs so they may both be removed through the same incision. More than two may be removed through one incision if it can be done without irritat-

ing the parts in trying to get the pigs to one opening. Rather than to cause any unnecessary irritation of the uterus it is better to make an incision for each foetus. After the foetuses have been removed take all the membranes and fluids from the uterus. Then close the incision in the uterus with an uninterrupted silk suture so as to turn the edges in and bring the peritoneal coats together. Then this horn should be replaced and the other horn grasped and brought to the outside in the same manner as the first. Should there be any foetuses in the fundus of the uterus they should be gently pressed back into the horn of the uterus and removed in the same way as the others. The incision in the uterus should be closed by a continuous silk suture, care being taken to turn the edges in so as to bring the peritoneal surfaces together. The abdominal incision should be closed by passing a suture through the skin, muscle and peritoneum. Little or no after treatment is advisable. With this method of operating, in the summer of 1900 I had eight cases out of eleven to make speedy and successful recoveries. Three of these were operated upon for Mr. D. C. Rook, a Poland China breeder of Oakley, by lantern light, and in 25 days were sold and shipped to Chicago. Last season out of ten cases seven made good recoveries. One was a case of extra-uterine pregnancy which made a good recovery and sold in a short time after the operation for about \$25.00.

DISCUSSION.

In answer to a question Dr. Stewart said that he gives an anaesthetic. He uses chloroform.

Dr. Heck has performed a number of Cæsarean sections upon sows with a mortality of only 15 per cent. He uses chloroform as an anaesthetic. He utilizes interrupted silk sutures. He disinfects his silk by soaking a few days in formaldehyde solution and then carries them in absolute alcohol.

Dr. Walrod said that he has done a number of these operations and that he always induces chloroform anaesthesia. His objection is that the operation does not command a fee commensurate with the difficulty of the operation.

Dr. Stewart said that in one case he secured a fee of five dollars; that he has never driven over a mile to do the operation, and that he operates partly because he has a scientific interest in such cases. This interest was gratified in one case by finding a case of extra-uterine pregnancy—the only case he had ever seen in a domestic animal.

Dr. D. H. Miller said that he uses an anaesthetic, as he fears death from shock without its use.

THE HORSE'S WORTH AFTER DEATH.—The following extract from the Philadelphia *Record* goes to show that the horse's usefulness continues even after death. The tail and main are especially valuable, and from these are made the haircloth of commerce. The short hair taken from the hides is used to stuff cushions and horse collars, thus the dead are made to minister to the comfort of the living. The hide furnishes a water-proof leather known to the trade as cordovan and is used for the manufacture of high-class hunting and wading boots. The hoofs of the animals are removed, and, after being boiled to extract, shipped to the manufacturer of combs and what is known as mikado goods. The leg bones are very hard and white, and are used for handles of pocket and table cutlery. The ribs and head are burned to make bone-black, after they have been treated for the glue that is in them. In the calcining of the bones the vapors arising are condensed and form the chief source of carbonate of ammonia, which constitutes the base of nearly all ammonical salts. There is an animal oil yielded in the cooking process which is a deadly poison and enters into the composition of many insecticides and vermifuges. The bones to make glue are dissolved in muriatic acid, which takes the phosphate of lime away, the soft element retaining the shape of the bone, is dissolved in boiling water, cast into spares and dried on nets. The phosphate of lime, acted upon by sulphuric acid and calcined with carbon, produces phosphorus for lucifer matches. The remaining flesh is distilled to obtain carbonate of ammonia. The resulting mass yields prussiate of potassium, with which tissues are dyed and iron transformed into steel. It also forms cyanide of potassium and prussic acid, the most terrible poison known in chemistry.

"I CANNOT GET ALONG WITHOUT THE REVIEW, I read it with a great deal of interest."—(*A. O. Kennedy, V.S., Columbia, Tenn.*)

"THE TRIALS OF THE VETERINARY EXAMINING BOARD."

BY H. E. TALBOT, M. D. C., DES MOINES, IA.

Read before the 14th Annual Meeting of the Iowa State Veterinary Medical Association,
February 11 and 12, 1902.

I have been making a few observations lately and I have noticed that it makes little difference how many roses are thrown in your pathway, if you attempt to pick them up and pin them on your coat, you are going to get scratched almost every time. The State Veterinary Examining Board has received its share of roses. We have individually and collectively been congratulated upon our appointment and we have been complimented for the so-called masterly manner in which we have coped with numerous problems. We have at times come to the conclusion that we had the undivided support of the profession throughout the State, and just as we have resolved to gather together a few of these roses of compliment and bind them into a bouquet of self-congratulation we have been rudely pricked by hidden thorns of censure or by the disapproval of those who, while condemning our course, have no remedy to offer with which to dress our wounds.

We have been forced to deal with problems which we little expected to encounter in the beginning. We have had no precedent to follow and have found it necessary to establish precedents as we went along. We have met at times when our treasury was so depleted that we could not definitely set the date of the next meeting and the overshadowing burden of our thoughts, in the language of Shakespeare, was, "When shall we three meet again?"

When we first received our appointment and proudly donned the toga of office we were convinced that we had but one path to follow and that was the one clearly mapped out for us by the law as passed. Since that time, however, we have discovered how seriously we were mistaken. We have had, at least, a dozen different interpretations of every section of the law, and

the queer part of the whole proceeding is that each interpreter expects us to agree with him. We have been flattered and threatened, cussed and discussed and assured that we would make a grave mistake if we either granted or refused to grant the same certificate. In short we have been made to feel that we were three of the most partial, irresponsible and generally incompetent men in the State of Iowa.

Our work, however, has not been wholly without recompense. At our meetings we have been delightfully entertained during our moments of leisure by the rich soprano voice of our worthy President, aided by the deep bass of our genial Treasurer. On numerous occasions passers-by have been attracted by their masterly renditions of Dr. Heck's favorite: "The bull Dog on the Bank and the Bull Frog in the Pool," or have stopped to listen to the silvery tones of Dr. Johnston as he led in "My Bonnie Jean." The doctor has always regretted that he didn't study music instead of veterinary medicine and a number who have heard him sing have regretted it too. As for myself, I never stop smoking long enough to sing.

We have received a number of very interesting and somewhat humorous letters, among them was one from an old gentleman, which ran thus: "I am the best horse-doctor in Allamakee Co.; send me a certificate by return mail." Another gentleman, when told that he was not eligible to registration, wrote and asked if \$25 would get him a certificate. Of course you don't expect us to read our answer to him right out loud. Another gentleman admitted that he wasn't eligible, but assured us that if we didn't give him a certificate any way he would expose us in some of our meanness. Now, wasn't that mean? We didn't know what to say to him either. In fact it is hard to dispose of some of these knotty questions to an advantage and with profit to yourself.

We have been severely condemned in some quarters for acting upon the decision of Judge Holmes, of this district, and issuing certificates to those who were entitled to them at the time the law went into effect. A number have not yet heard

of this decision and in one case proceedings were begun against a man who had been registered and held a certificate under this decision, but the matter was brought to our attention in time to save costs to both parties. As no doubt you are all aware, the decision referred to is to the effect that all non-graduates who were eligible to registration at the time the law went into effect are still eligible upon making required application accompanied by affidavits and fee. All kinds of stories have been afloat regarding this decision ; some to the effect that the law was unconstitutional and could not be enforced and even registered men throughout the State have anxiously written in asking if these stories are true. The worst difficulty which we have encountered, however, has been with the cases of a number who were rejected before and make application again under this ruling. We have watched them and I think we can safely say that practically none who have been registered under this ruling are incompetent or ineligible.

I have heard somewhere that brevity is the soul of wit, and, as I can readily believe that such a quality would be appreciated at this time, I will draw my paper to a close after reading a short contribution from the pen of the board stenographer. He has been in our employ for so long that he wants to register, but we have told him that treating an average of one case every two years is not sufficient and that he would have to go to school. The following verses will be appreciated as an illustration of what the veterinarian gets in this world and what he may expect to get in the next.

THE VET.

He's a man who gets up early in the mornin'
And the pleasures of good rest he'll never know.
He enjoys a midnight drive out in the country
When the mercury is forty-five below.
He exists because his neighbors want to use him,
He's the slave of all the country, you can bet ;
He's the man you send for quick
When your hoss is gettin' sick ;
He's that easy goin' feller called the "vet."

If you're figurin' on gettin' help for nothin',
He's the man you want to call on every time;
He can work as hard as any man a-livin',
But collectin' doesn't seem to be his line.
He's too busy to remember what you owe him
And he's mighty glad to take what he can get,
He don't look for any pay
'Til along 'bout Judgment day—
And he's seldom disappointed, is the "vet."

When accounts on earth have been marked off the ledger
And we're all a-takin' chances in the sky,
When we're kinder blockin' up the golden stairway
'Til the angels have to crowd a-gettin' by;
I'll just bet St. Peter'll come and tell us fellers
That he hasn't any vacent rooms to let,
That we'll have to turn aroun',
Take the elevator down
And go live out in the stable with the "vet."

ITALY has more donkeys than any other European country, there being 700,000 of them there. France has of late years taken to mule breeding. In this last industry no country can compete with the United States, where there are more than 3,000,000 mules and donkeys taken together. The mules are for the most part in the West, but there are very many working in the coal and iron mines of Pennsylvania and West Virginia. They are the descendants of the Spanish donkeys that thread the almost inaccessible fastnesses of the Andes. The donkeys of Spain and Calabria, which are exported to Kentucky, will bring \$200, while the Irish or Italian donkey can be purchased for twelve shillings. Some of the finest mules in Virginia are descended from the jack that was presented to General Washington by the Spanish government.

ACCORDING to the New York *Sun*, there are 43,000,000 horses and mules in Europe, or more than twice as many as are there in this country.

THE NEW JERSEY STATE BOARD OF VETERINARY MEDICAL EXAMINERS has organized by electing Dr. Wm. Herbert Lowe, of Paterson, President; Dr. Whitfield Gray, of Newton, Secretary, and Dr. T. E. Smith, of Jersey City, Treasurer.

50,000 people witnessed the recent New York speedway parade.

"ACCEPT my congratulations on the marked improvement of a most excellent journal from year to year.—(H. D. Stebbins, V. S., West Winfield, N. Y.)

OUR INFLUENCE TO THE AGRICULTURIST IN BREEDING AND FEEDING.

BY W. G. HUYETT, M. D. V., WORNERSVILLE, PA.

Read before the Schuylkill Valley Veterinary Medical Association, at Reading, Pa., December, 1901.

My motive in presenting this paper for your kind attention is not to unearth information upon the subjects of both breeding and feeding not yet ascertained ; but merely to make mention of the fact how the veterinarian may render himself practically more serviceable in general to his patronage than by simply ministering unto the domestic animals when in impaired health.

The average stockman is indeed very negligent and rather careless in managing and seeing to the welfare of his animals —following any system or on none at all ; other than being eager to inspire some good quality in his colt, or to feed some balanced ration to his dairy herd, and rely upon the resources.

In feeding stock, it is by no means the most food that maketh the gain—but the kind and quality, and a variety of that quality—as variety promotes digestion. Many of the large stock-farms or breeding establishments require the constant employment of a competent surgeon, but I have reference to the average agriculturist—the common breeder on a small scale—generally for his own especial purpose, who lacks the knowledge of fundamental principles of breeding, excepting that gained evidently by costly experience, to whom we should contribute our advice, when the privilege suggests itself, as quite often we are approached with such questions ; thus showing the significance and importance of being posted to meet such requirements justly and give satisfactory evidence. It is, however, very inconsiderate to be learned like a regular breeder, for some truth resolves upon the expression, “That a breeder, like a poet, is born, not made.”

The art of breeding may be divided into two branches ; namely, its principles and its practice. Without the former cor-

rect the latter will be at fault, and it will be a matter of chance or uncertainty whether success or failure results from the union.

When certain effects resulting from mating animals are viewed, as the result of certain definite principles relating to the perpetuation and improvement of breeds, the systematic application of which is clearly under the control of man, then breeding will be successful and profitable.

The art of breeding always implies that the breeder has in his mind an ideal form or model after which he attempts to mould his strain. In the selection of individuals for paring, generally speaking, those animals having certain points peculiarly well developed are mated with those excelling in others directly, in order that a harmonious whole may follow the union.

The peculiarities of breeds in animals find an exact counterpart in cultivated plants, the value of particular kinds often depending in a great measure upon characters scarcely capable of being defined in the language of scientific description, but to the production and perpetuation of which the attention of the cultivator cannot be too earnestly directed.

These also in plants, as in animals, have of themselves little permanence, and the preservation and perpetuation of them depends upon the same assiduous attention and high cultivation from which, more frequently than from any mere accidental circumstances they have originated. To the breeding of valuable domestic animals great attention has of late been paid—probably more since the beginning of the nineteenth century than in all the previous history of the world—and with results the magnitude of which may in some measure be estimated from the statement made on very competent authority that within the last thirty years the weight of mutton produced has been about doubled in proportion to the number of sheep kept.

Sometimes a perpetuation of good qualities is the great object of the breeder, and a combination of them in the highest possible degree is aimed at.

In regard to the physiological principles of breeding, in so far as application of them has yet been found practical, are only

the best known principles of physiology. In a great measure, however, the rules which guide the breeding of stock have been learned by experience, and are rather to be regarded as contributions to science than as deductions from it.

The probable relative influence of the male and female parent upon their progeny, is a point unquestionably of the greatest importance, but concerning which widely different opinions have been maintained; and another much controverted and important point is the propriety of breeding *in* and *in*. Practically, the rule is always observed by those who seek the improvement of a breed, of selecting the very finest animals possible, both male and female; although a great improvement of the existing stock on a farm is often effected in the most advantageous manner by the mere introduction of males of better quality.

The dangers of breeding *in* and *in* are very generally acknowledged, even whilst it is contended that they may very much be obviated by careful rejection of every faulty animal; and that in this way the utmost advantage may be taken of the very highest improvements; but it is likewise very generally admitted that, if equally improved individuals can be obtained not so nearly related, it is better not to seek the perpetuation of the breed by their means.

It is also a rule of much practical importance, that an improvement of breed is to be attained not by a *cross* between animals of very different breeds, as between a dray horse and a race horse, but only between those which are comparatively similar. The result of the intermixture of very dissimilar breeds is never in any respect satisfactory.

THE bill before the Maryland Legislature, appropriating \$2000 and appointing a commission to investigate the disease "cerebro-spinal meningitis" (described in the April REVIEW by Dr. S. S. Buckley under the name of "Acute Enzoötic Leucoencephalitis") has become a law. Because the bill did not provide that the investigation should be carried on by the State Live-Stock officials, they attempted to defeat it.

A PHILIPPINE NATIVE.

BY COLEMAN NOCKOLDS M. D., V. S., VET. 1ST CAV., U. S. ARMY,
BATANGAS, P. I.

Among the large number of pests that are dreaded by our horses in the Philippines perhaps there are none more blood-thirsty and energetic than the land leech. This little parasite measures from 2 to 4 cm. in length and is about as thick as the quill of a large sized chicken-feather when empty and about double that thickness when full of blood. They live in the grass at an elevation of 1000 ft. or more above the sea in many parts of the islands and are especially active during the rainy season. I remember a troop commander sending his horses to be herded upon some succulent-looking grass a short distance from camp at a place called Lucban in Tayabas Province, a place particularly favorable for leeches, being situated at the base of a large mountain against which clouds were blown so that it rained almost every day during the year. In a few minutes the fetlocks and lower portions of the limbs of the horses were literally covered with leeches, which of course caused a general stampede, carrying the horses (most of which had more or less blood on their limbs from the bites) back to their corral, which was free from grass and leeches. At the same place some time later whilst superintending the destruction of some glandered horses and mules I noticed the leggings which the soldiers and myself were wearing were in a marvelously short space of time swarming with these troublesome little suctoriæ. Evidently they make good use of their eyes (which I believe are ten or more in number), for quite one-fourth of them had their little elongated bodies partially through the eyelets of our shoes and leggings, in spite of the fact that we were exceedingly busy knocking them off.

On the march when one is apt to neglect to think of their existence they often gain entrance to the ears, nose and even conjunctiva of both horses and men. A very favorable site for them to attach themselves is the glands penis and anus in man and the fetlocks, sheath, anus, nose and mouth of horses. They

will also attach themselves to any part of the skin if unable to reach portions mentioned. It is fortunate that such a remedy as soap-suds or salt and water will kill these little pests. It is said that natives and native animals have died from the effects of the anaemia produced by the persistent bites and bloodlettings of these parasites, but other than the discomfort of seeing or knowing that they have attached themselves to the body I have not seen any bad effects from them either among animals or men. Sometimes several hundred may be found on one horse.

ANOTHER HOPPLED PACER.—The "strap brigade" must feel flattered by the latest addition to their ranks. It belongs in Indiana, from whence originated the name "Indiana Pajamas." The new comer to the pacing ranks is an animal that "wears hair" just as a horse does, but it also wears horns, for it is nothing more or less than a yearling steer, and already has shown an eighth with the hopples on in eighteen seconds, a 2.24 clip. If its trainer succeeds in conditioning this wonderful pacing machine to carry the clip for a mile, will it be eligible to the list of standard pacing performers? How proud some owners of hopped pacers (horses) that could not beat 2.25 would feel if this pacing cow (steer) should take a mark of 2.24. There is one thing about this new hopped performer in which it beats the ordinary hopped pacers, and that is, that after its days of usefulness as a track performer are over, it can at least be made available as material for a beef stew (without prejudice.) Just to illustrate the real commercial value of a hopped pacer, why not get up a race between this new phenomenon and a yearling gelding, and see which will bring the most money at auction? Who has a yearling gelding that can pace an eighth, with the hopples on, right now, in eighteen seconds? At the next meeting of the Turf Congress it will probably be necessary to introduce a new rule something on the following lines: "Bulls, steers, cows, elephants, camels, dromedaries, elks and other such animals wearing hopples will not be eligible to start against horses, unless especially permitted to pay the published conditions of the race." Welcome to the new addition to the pacing brigade. It only helps to show how the use of hopples has deteriorated the value of horses.—(*Am. Horse-Breeder, Ap. 23.*)

GLYCO-HEROIN (SMITH) IN THE TREATMENT OF COUGHS.

BY J. F. DEVINE, D. V. S., GOSHEN, N. Y.

Last fall I received a sample of glyco-heroin (Smith), also some literature giving testimonials as to its efficiency in the treatment of coughs, from the Marlin H. Smith Co., 68 Murray St., New York.

I decided to give it a trial, as I then had in mind a couple of cases of chronic cough which had almost proven a bane to my existence. I have since treated eleven cases and below give a short clinical report of same :—

Case I.—Bay gelding, hack horse, thin in flesh, capricious appetite, temperature normal, severe laryngeal cough of about four months' duration. Having been through the regular course of treatment for such conditions but with no benefit whatever, I prescribed glyco-heroin (Smith), Oi. Sig. $\frac{1}{2}$ ss t. i. d. After he had taken Oi without any apparent result, I then decided to give larger and more frequent doses (having by this time obtained good results from Cases II. and III.) I again prescribed for him glyco-heroin, Oii. Sig. $\frac{1}{2}$ ii every four hours. He showed decided improvement in three days and in about ten days his cough had subsided, his condition improved, and everybody is pleased with the results.

Case II.—Brown gelding, race horse, in perfect health ; temperature normal, etc. ; would jog at ease, but to start him meant a violent paroxysm of coughing, which would unbalance him and cause him to break. Prescribed glyco-heroin Oii. Sig. $\frac{1}{2}$ ii every four hours, which proved effective in two days.

Case III.—Bay mare, race horse, which had been treated by the writer some three months before for influenza and as a sequel she still had a severe laryngeal cough much to the annoyance of the owner. She received everything on the calendar, blister, etc., but she got no relief. Prescribed same as for No. II, and cough subsided in about one week.

Case IV.—Bay gelding, gentleman's road horse ; had been

sick some three months before and had coughed ever since. Prescribed same as for others. He left word at my office about three weeks later that the treatment was satisfactory, but I have never seen him since to get a complete history.

Case V.—Bay mare, race horse, just shipped from West Virginia; has a bad cough, feels well, and no elevation of temperature. Prescribed same as others. Used about half the quantity.

The rest of the cases treated simulated those just described, more or less, with same results, excepting Case IX, which was a poorly nourished hack horse, and showed no improvement whatever. I am not certain that he received his medicine at all; if so, I doubt its regularity.

I have never used glyco-heroin during the active stages of any conditions where it would seem indicated (say, laryngitis, pharyngitis, etc.), and therefore cannot say anything for or against it in such conditions. My reasons for not giving it a trial at such times is that there are so many cheaper remedies which have always served us to a nicety, but there are cases, and we all meet them now and then, when we would gladly turn to anything to suppress the cough and silence the owner, and for such glyco-heroin (Smith) has a place in veterinary medicine.

OBJECT TO BEING CALLED "Doc."—*Syracuse, N. Y., April 7.*—Syracuse physicians have united in an effort to start a movement against being addressed as "Doc." Their plan is to call attention to the nickname every time they hear it and ask that it be discontinued in addressing them. They think it is correct enough to call druggists and veterinary surgeons by the nickname, but not doctors of medicine. A well known physician said to-day, as he corrected a friend who used the offensive diminutive: "I hope you won't be offended, but we physicians consider the term 'Doc.' an insult. Call us by our Christian names or family names, but please not the nickname—it is unworthy of the profession and belittles the men in it. You can call a horse doctor or a druggist 'Doc.' without offending the proprieties, but not a physician. If the newspapers will assist in breaking up the habit they will earn the gratitude of the men in the profession."—(*New York World.*)

REPORTS OF CASES.

"Careful observation makes a skillful practitioner, but his skill dies with him. By recording his observations, he adds to the knowledge of his profession, and assists by his facts in building up the solid edifice of pathological science."

SUBDURAL CEREBRAL HÆMORRHAGE—INSTANT DEATH.

By JOHN J. REPP, V. M. D., Professor of Pathology, Veterinary Division, Iowa State College, Ames, Iowa.

Subject.—Pure-bred shire stallion, age 9 years, weight 1700 lbs. History: Had been rather carelessly kept during the winter. About March 15, 1902, the owner began to prepare him for sale. He was sold on Monday, April 28, 1902, and from that time to Monday, May 5, when he died, he received liberal rations and moderate exercise. At about 2 P. M. May 5, the owner started to lead him several miles into the country. When the edge of the village, about one-half mile from the stable, was reached, a freight train passed by close to the road on which the stallion was being led. The stallion became frightened somewhat at the train, but not markedly, and did not act very violently. He became quiet again, but had not progressed more than 50 feet when he began to reel, staggered to the side of the road, fell to the ground, and was dead in one minute.

The owner, with a view to the recovery of the price paid for the animal, requested me to make an autopsy. This was begun at 5 A. M. May 6.

Autopsy.—Animal in good condition of flesh; lying on right side; left fore and hind limb slightly in advance; right fore limb flexed at knee and pastern. Rigor mortis present; no external evidence of violence; about 2 lbs. of faeces apparently passed from rectum after falling lay on the ground; anus dilated about one inch; penis protruded full length; eyes half closed; small amount of blood issued from nostrils; marked abdominal tympany, which was of post-mortem development, as the owner said there was no tympany at the time of death. In making superficial incisions it was noticed that the blood was very dark in color and not coagulated. This was noted later throughout the body. Muscles were pale and had somewhat of a cooked appearance; right testicle and tunica vaginalis adherent; some congestion, apparently hypostatic, around right spermatic cord; left tunica vaginalis slightly dropsical; superficial lymphatic glands hyperæmic; diaphragm ruptured after death at its lower half, the rupture being about six inches in

size and irregular in outline; general chronic simple gastro-enteritis of mild form. On opening the occipito-atloid articulation and cutting through the dura mater for the purpose of removing the head, about a pint of blood ran out from both above and below the articulation. On removal of the brain the base of the skull was found filled with blood. The point of rupture was not located, but it was doubtless in some part of the cerebro-spinal or the internal carotid artery where these vessels pass through the subdural space. It may be of interest to observe that there was no subarachnoid, interstitial or intraventricular haemorrhage. The haemorrhage was purely subdural.

Remarks.—Death was doubtless the result of violent interference with the centres in the medulla oblongata which control the vital functions.

It is doubtless true that sudden death of animals is often due to cerebral haemorrhage. When an autopsy is made on these cases removal and examination of the brain should not be neglected.

A CASE OF VOMITING IN A COW.*

By R. J. MICHENER, V. S., Lebanon, Ohio.

I was called Dec. 17, 1900, to see a large black-and-white cow, which the owner stated had a cough, and after eating would vomit up large quantities of undigested food. On arrival found animal very much emaciated; pulse 60, temperature 102° in the afternoon; appetite fair. On auscultation found slight mucous râles in the right lung, left one apparently healthy. Bowels slightly constipated. She had a nice fat calf, a few weeks old, by her side, which indicated a good flow of milk.

I prescribed oleum lini, Oi; also fld. ext. nux and belladonna, each 3*i*, three times a day. As the oil had but little effect I prescribed in two days after, sulphate magnesium, 1*b i.*, which prevented to some extent the vomiting, but improvement was only of short duration, for she was soon as bad as ever again. After using the nux awhile without apparent benefit, I tried hyposulph. soda in the feed twice per day, with no better results. Next I resorted to hydrastis canadensis fluid extract, two drachms three times per day, with no better results than before. About this time some one suggested to the owner to give her coffee, well browned, which was done, with the result that after two doses she ceased vomiting and her appetite im-

* Read before the Ohio State Veterinary Medical Association, Jan. 14th, 1902.

proved somewhat, and when grass came she was turned to pasture and improved rapidly in flesh and also in flow of milk, as she gave 40 lbs. per day, but still continued to cough.

I neglected to state that the last of March I tested her with tuberculin, with negative results. I heard nothing more from her until Nov. 10, 1901, when the owner stated that he found her dead in the stable that morning, having apparently died without a struggle. He also stated that he fed and milked late the night before, and that she seemed well and ate her feed up clean. As I had to go away that day, I requested him to leave her until the next morning to bury, to which he made no objection.

On the following morning I went to examine my cadaver and was informed by the owner that, not wishing to wait for me, he got the assistance of a butcher to open it, with the following result: Lungs, liver, kidneys and stomach healthy. Small intestines slightly inflamed. Quite a good deal of fat about the kidneys, indicating that she was in good condition. I am sorry to state the heart was not examined, as I think there must have been trouble with that organ to account for her sudden death.

AMPUTATION OF A BULL'S PENIS.*

By GEO. M. WALROD, V. S., Storm Lake, Ia.

On September 25, 1901, I was called to see a bull which the owner said had hurt his penis. On arriving I found the bull with his penis protruding about five or six inches, and split at the end for a distance of about $1\frac{1}{2}$ ins. On further examination I found the penis very much enlarged for about five or six inches inside the sheath and gangrenous. My prognosis was that I might save the animal but not the penis. The owner told me to do as I thought best, so I concluded to amputate the penis. I divided the sheath from the prepuce back to near the scrotum, and then divided the tissues of the penis until I came to the urethra, ligating the external and internal pudic arteries. I then dissected out one-half inch of the urethra and cut through it at right angles to its long axis, so as to leave the stub of the urethra about one-half inch longer than the remnant of the penis. Then I divided the protruding part of the urethra into three equal parts suturing each part to the corpus spongiosum.

*Read before the 14th Annual Meeting of the Iowa State Veterinary Medical Association, Feb. 11 and 12, 1902.

I then dissected the mucous lining from the sheath and excised a little of the sheath at the prepuce. I then sutured the skin incision which had been made in the sheath. Antiseptic precautions were, of course, taken throughout. Antiseptic wash was used for a few days after the operation, and then this was followed by an ointment composed of iodoform and petrolatum, 1 to 8, applied to the rudimentary penis. The animal made a good recovery without missing a feed. He was stall fed for three months, at the end of which time he was quite fat and was sold for beef.

Dr. Heck asked if the members thought that amputation of the horse's penis could be done with the animal in the standing position. He said he was thinking of trying it with the horse standing by the aid of cocaine locally. None of the members had had experience with the horse standing, but those who expressed themselves thought it could not be done in that way, and that the animal should be cast.

HYDROPS AMNII.

By S. R. HOWARD, V. S., Hillsboro, Ohio.

Subject, ten-year-old white cow, of average size; owner, John Barrett, near Centerfield, O.; bred two years before. All this time she remained in apparent good health, but gradually increasing in abdominal girth. No calf or signs of calving. Owner spanned her abdomen with rope and measured rope with square. Her abdominal dimension was fully fifteen feet in circumference. Have had several similar cases, but in many years of practice I have never seen such distension and never expect to again. It will read very incredible that she was very hard to catch on account of her being very fleet of foot.

I punctured her right flank low down, with large-sized horse trocar and canula. For three and one-half hours a very strong and constant stream ran down the knoll on which she stood.

It was growing dark and cold. She was panting considerably; her flanks collapsed and she was getting very weak.

Withdrew canula.

Six months after owner informed me she quickly fattened and went to market with other cattle. The liquid discharge was limpid and transparent.

A MILD CASE OF TETANUS (?)

By F. R. WHIPPLE, M. D. V., Kewanee, Illinois.

On April 16 a farmer came into my office saying he had a

mare that he thought had pinkeye ; said eye was very much inflamed, and eyelids very much swollen ; appetite was good and he was working her every day in the field. I gave him a four-ounce bottle of zinc sulphate solution to bathe eyes with.

April 24th he drove the mare to town, saying she was no better. I walked up the street where mare was standing, and when I took hold of the bridle she raised her head, exposing the membrana nictitans as much as in any case of tetanus I ever have seen, but could see no other symptoms of tetanus ; no elevation of tail, no stiffness in gait, and eating as good as any horse ; no dilatation of the nostrils, etc. On May 4th the mare was driven to town and is slowly improving, the membrane covering a very little of the eyeball now.

Now, has this been a mild case of tetanus, or what was it ?

. FOREIGN BODIES IN BUCCAL CAVITY.

By J. B. L. TERRELL, V. S., Dresden, Tenn.

I read an article in the March REVIEW about foreign substance in the horse's mouth.

I had two cases last year, both corn cobs, one between third upper molars. The owner had bought the horse three weeks previous, and the seller stated that he was sound, but was not eating much ; teeth were off some way ; slobbering some. When I removed the cob about half a pint of pus came out. The cob was buried about an inch ; swelling almost covered cob.

The second horse had not eaten or drank anything for four days ; was not slobbering any ; a great deal of inflammation of roof of mouth, but no pus. This was between the fourth upper molars. Removed the cob and had no further trouble.

FOREIGN SUBSTANCE IN A MULE'S FOOT.

By J. B. L. TERRELL, V. S., Dresden, Tenn.

A mule was brought to me by owner, who stated that about fourteen months previous it had stuck a piece of pine plank in the toe of the right fore foot, in the center. He pulled out the piece, the wound healed, but animal would get very lame at times. The foot back of the heel had a very tender place on the inside, which broke, and I probed and removed a piece of pine plank a little over one inch long, one-half inch wide, one-eighth inch thick at one end and nearly three-quarters at the other. The small end up, where I caught it with pincers. The mule did well with but little treatment.

DEPARTMENT OF SURGERY.

By L. A. AND E. MERILLAT,

Chicago Veterinary College, 2537-39 State Street, Chicago, Ill.

GASTROHYSTEROTOMY.

By DR. L. C. BUTTERFIELD.

GASTROHYSTEROTOMY OR CÆSAREAN SECTION is an operation performed to deliver the foetus from the uterus of the mother. It consists of performing laparotomy and hysterotomy, as the name implies, and the delivery of the young through these artificial channels. This is an operation which was performed and written on from a very early period in the world's history. But owing to the fact that it being an operation followed by the most dire results, it does not at this time occupy a very prominent place in veterinary surgery. But from a theoretical point of view there is no reason why it should not be more often employed in cases of dystokia in the cow, from the simple fact that oophorectomy is practiced with impunity in these animals, and as the ox to all appearances is less liable to septic infection.

Indications.—This operation should be attempted when there is any malpresentation which would make it impossible to deliver the foetus through the natural channels. When the foetus is too large to be delivered unless embryotomy were performed, and the foetus being of more value than the dam, were it delivered alive, it is desirous of saving its life while the life of the dam might be sacrificed. Again, when the mother, near the termination of pregnancy, is so seriously ill or injured that she cannot live until delivery takes place, it would then be advisable to kill the mother and the foetus be extracted at once, the progeny being of enough value to warrant the operation. In these latter cases it should be applied to the mare as well. But in this we will deal with the operation as it applies to the cow, with a view of saving the mother as well as the young.

As this is an operation of the most complicated and serious type performed in veterinary surgery, the operator should spare no pains, in the method of performance, preparation and equipments.

The operation should be performed under profound anaesthesia and under the most strict antiseptic precautions, with the help of at least three trustworthy assistants.

Instruments.—(a) Scalpel, (b) probe-pointed bistoury, (c)

curved scissors, (d) haemostatic forceps, (e) needles, (f) sutures, absorbent cotton, and bandages.

Preparation.—Seat of operation should be shaved covering an area of at least fourteen square inches. Should then be thoroughly scrubbed with soap and water, dried, and again thoroughly washed with a mercuric chloride solution (1-500). Patient should then be thrown on the left side, with as much care as possible, using the ordinary side-lines; patient should be cast on a bed of straw or fine shavings, which had been previously wet down with a solution of good antiseptic of some kind. The patient is now anaesthetized, and side-lines removed and field of operation again sterilized with mercuric chloride (1-500).

As soon as anaesthesia is complete, operation should be carried out as follows:

Incision is first made through skin of right flank, below and in front of the anterior spine of the ilium. The incision should pass downward and forward, following the fibres of the small oblique muscle. The length of incision will depend on size of animal: in a cow of ordinary size, it should be from twelve to fourteen inches in length. The incision through the skin made, incision should then be made through the muscles, and all blood vessels should be picked up and ligated as met with. Once through skin and muscles, the peritoneum is brought to view; great care should now be used in making incision into this. A small opening should be made in this at the upper commissure of the external incision, using extreme care that the intestines are not injured. The first two fingers of the left hand are now passed through the opening, and, using them as a director, the incision is made in the peritoneum similar to the one made in cuticle and muscles.

The operator now passes his hand into the abdominal cavity and locates the uterus, which when found, should be brought opposite the external incision, should it not be there at first. Two assistants now compress the borders of the incision, bringing them in close apposition with the uterus. This the operator cuts through slowly, layer after layer, using extreme care, so as to avoid wounding the foetal membranes. Two fingers are again inserted between the walls of the uterus and the foetal membranes, and the probe-pointed bistoury is again used as in the incision through the peritoneum. The foetal membranes are now torn near the lower commissure of the incision in the uterus and the amniotic fluid allowed to escape outside the

peritoneal cavity. The surgeon's hand is now inserted into the uterus and grasps any part of the foetus it may come in contact with and delivers it through the openings made. The umbilical cord is quickly ligated, severed, and the young creature is given to an assistant, who sees that it receives proper attention.

The foetal membranes are then quickly removed and the interior of uterus sponged out with weak solution of carbolic acid, which should be at the body temperature. It should then be dried with absorbent cotton and the interior of uterus sparingly dusted with powdered boric acid. The wound in the uterus is now sutured, using Lembert's or Lembert-Czerny sutures; for suturing the uterus sterilized cat-gut should be used.

The uterus is now allowed to assume its normal position, and the external incision is sutured, using either button or quill sutures. After suturing, the incision is dusted with dry dressing, preferably iodoform, and three layers of absorbent cotton applied, to be held in place by a bandage at least six inches wide passed several times around the body. Then over all an abdominal supporter of heavy canvas is applied. This supporter should be allowed to reach from the fore-limbs to the hind-limbs and external angles of the ilium, and fastened in a secure manner at the back.

The surgeon will probably meet with some difficulty in applying these bandages, as they must be applied with the animal still in the recumbent position. After they are once in place the animal is allowed to regain her feet.

After-care of patient would consist of administering such drugs as would prevent straining, combined with stimulants. Much straining is to be avoided, as straining would cause a tearing out of the sutures and the death of the animal.

Patient should be fed on soft diet. Bandages should be removed about the fifth day and the incision irrigated with a bland antiseptic, after which dry dressings should be applied, and the wound dressed every day thereafter until union is complete. Patient should not be allowed to lie down until the wound is perfectly healed.

The sequelæ to this operation are many and varied, but we will speak of but a few of the more prominent ones.

The first shock would follow within a few hours of operation. Tearing out of sutures and prolapsus of intestines may follow any time from the time the operation is performed until perfect union of the parts takes place.

Metritis and metro-peritonitis are liable to occur any time from end of the second day until the tenth day following the operation. If the patient is alive at the end of the tenth day, you need have little fear of the above named sequelæ, but there is a chance that, although no infection has taken place, there will be sufficient inflammation set up to cause adhesion of some parts of the intestines to the incisions made, either in the abdominal wall or the uterus, which would in all probability cause the death of the animal at a later period.

SURGICAL ITEMS.

X-Rays in Cancer.—It has been recently proven beyond question that the Roentgen rays exerts a decided inhibitory effect upon the growth of carcinomata. A number of experimenters have reported excellent results, and evidence at this writing would indicate that the new treatment is at least palliative if not curative. The discovery will, of course, attract only nominal attention in veterinary surgery because "unoperative" cancer is seldom treated by the veterinary surgeon. Patients thus afflicted are usually killed. This new departure might, however, be utilized in prolonging the life of a favorite pet or valuable brood-mare.—(L. A. M.).

PRESIDENT LOWE, of the New Jersey State Board of Veterinary Medical Examiners, announces that an examination for license to practice veterinary medicine, surgery and dentistry in the State of New Jersey will be held at the State capital in the city of Trenton, on Tuesday, June 24.

DOG WON'T BUY RIVAL PAPER.—*Concord, N. H., May 10.*—There is a dog that has become able to distinguish between two daily papers published here, and he has gained considerable local reputation. He calls at a news stand every evening for his master's favorite paper, which is carefully folded by the dealer and placed in the dog's mouth. A few days ago the dealer folded a copy of the opposition sheet and tried to induce the dog to take it. The animal instead began to growl and snarl and make things uncomfortable in the vicinity of the news stand. No amount of coaxing would pacify him until his favorite paper was placed in his mouth. Then he wagged his tail and trotted off.

"I COULD NOT DO WITHOUT THE REVIEW, for I would be at a loss in not keeping up with the times."—(P. A. Girard, M. D. C., New Richmond, Wis.)

EXTRACTS FROM EXCHANGES.

GERMAN REVIEW.

By ADOLPH EICHORN, D. V. S., Bureau of Animal Industry, Milwaukee, Wis.

SHALL HORSES BE WATERED BEFORE, BETWEEN, OR AFTER FEEDING? [*Experimental Investigations, by Prof. Dr. F. Tangle.*]—The differences in opinion, also the importance of this question, caused the author to undertake a series of experiments—one may say the first in this line—to determine the time most suitable for watering the animals. The experiments were performed in a systematic way on several horses at a time, and all the experiments were verified by a double chemical analysis, so that the results might be considered conclusive, as to which method of the digestion of food is most perfect. The work is of the greatest interest, and as it is too extensive, I will confine myself to the practical conclusions, which are the following: Horses may be watered during, before, or after feeding, without impairing the nutritive value of the food. Each method of watering is equally agreeable to the horse, and may be practiced according to circumstances. That there are circumstances which will compel one or the other method of watering need hardly be mentioned. (The author would only like to mention, for example, that animals after a great loss of water, for instance, after work of long duration—should be watered before feeding, as the animal will not properly partake of food before they quench their thirst.) Although each method of watering agrees equally with the horse, it is not advisable to change unnecessarily the method of watering, as it appears that animals will not remain indifferent to a change in the accustomed watering, as in most cases this was indicated by the experiments. In every case when there was a change made from watering after feeding to watering before feeding, there was observed a diminishing in the appetite for a few days. Not that they refused to consume the food placed before them, but they did not manifest the same eagerness in partaking of the food; it took a longer time before it was consumed. This was not observed in changing the watering from before to after feeding, or from after to between feeding. It is probable that the watering before feeding causes a certain sense of satiation to which the animals must become accustomed.—(*Berl. Thierarzt. Woch.*)

REMOVAL OF A NEW FORMATION OF THE LUNG IN A DOG BY AN OPERATION (PNEUMECTOMY) [Prof. Dr. Parascandolo].—A hunting dog showed symptoms of an affection of the right lung. From the results of a repeated microscopical examination of the nasal discharge, the presence of a new formation was conclusively diagnosed, and a removal of the same, by means of performing pneumectomy, was decided upon. The field of operation was carefully cleansed and disinfected, and the dog was anaesthetized with morphine injections and chloroform inhalations. With the aid of Lechner's apparatus (a mouth speculum), the mouth was kept open, and a rubber tube introduced into the larynx, which was connected with a bellows. With the latter, during the operation, an artificial respiration was maintained by an assistant. The opening of the thorax was performed by Tussier's method, in the second intercostal space, a few centimeters from the sternum, by an incision through the skin and muscles. After a careful detachment of the costal pleura, with the aid of the thumb and forefinger, a nodule of the size of a hazelnut was located in the lung. In removing the same a forceps of which the ends were covered with rubber were introduced, the parietal layer of the pleura torn, and the part which contained the nodule was pulled out, ligated with silk and cut off. The stump of the lung was carefully sewed to the periosteum of the ribs. Muscles and skin were also united by stitches, and the wound covered by collodion, xeroform and bandage. The wound healed without a reaction, and after 15 days the dog was discharged as cured. The examination of the extirpated lung revealed a few small isolated nodules, which proved to be of a carcinomatous nature.—(Archiv. f. wiss. und Prac. Thierhk.)

PETECHIAL FEVER (MORBUS MACULOSUS) IN HORSE AND TRANSMISSION OF THE SAME TO MAN [Bock].—A horse affected with petechial fever (purpura haemorrhagica) was on the road to recovery with the use of argent. colloidale, iodide of potassium in the drinking water, etc. On the twentieth day of the sickness, about four days after the apparent recovery, the patient manifested symptoms of a developing suppurative pneumonia, which on the fourth day resulted in the death of the patient. Autopsy: Suppurative pleuro-pneumonia. This case is of great interest for the reason that a few days after the death of the horse the driver became affected with the manifestations of petechial fever. After introductory headaches, loss of appetite and general weakness, which were first attrib-

uted to a cold, the condition became very aggravated. After eight days a few red spots made their appearance on the body, also on the inside of the knee and elbow. The patient complained of pain in the muscles, so that every motion caused great pains. The consulting physician established a diagnosis of *morbus maculosus* transmitted from the horse. The manifestations of the disease became more marked until the twelfth day, the red blotches increased in number, there was œdema of the legs, on the body, also effusions in the elbow and knee joints, so that the patient could hardly move, suffering great agony. The disease terminated favorably; in about eight weeks complete recovery took place. In discussing the case with the attending physician, he remarked that during the past summer he observed two similar cases. In the one case, it was the driver affected, who attended a horse suffering and succumbing to *morbus maculosus*. In the other case, a reserve officer of the army was the victim; he rode his horse until it became affected with *morbus maculosus*, resulting in the death of the animal. In both cases the affections were *morbus maculosus Werlhofii*. Up till now the identity of these two diseases is not determined, though Dieckerhoff has already noted their similarity. The observed cases are sufficient to emphasize caution when treating an animal for *morbus maculosus*, also to instruct the attending persons.—(*Zeitschr. f. Vet.*)

CHININ AS STIPTICUM AND ANTISEPTICUM.—Marx, in the *Centralbl. f. Chirurgie*, recommends as a wound dressing the saturation of the dressing in the following solution:

R Chinin hydrochl.	1.0
Sprts. rect.	3.0
Aquæ dest. ad.	100.0

This solution is supposed to stop all parenchymatous haemorrhages, and also to act as an antiseptic.

ENGLISH REVIEW.

By Prof. A. LIAUTARD, M. D., V. M.

INTUSSUSCEPTION OF THE CÆCUM [*W. Shaw, F. R. C. V. S.*]—The author after considering the fact that invagination of the intestines is, in the horse, uncommon when compared with twists or impaction of the bowels from dung-balls or stony concretions, and, again, that intussusception of the small intes-

tines, if to any large degree of length, usually causes acute agony and death in a short time, relates the surprise he had when making the post-mortem of a mare which he had advised to be killed, because he suspected her suffering with a dung-ball of the colon and in which he found that the whole cæcum had passed into the colon, and when this intestine was opened the cæcum was found laying there like an immense dung-ball, with its walls at least four inches thick and the whole mass black as coal. The mare had been taken ill three weeks before, being uneasy with little abdominal pains ; these remained until she was killed. She fed some, had small passages, was never in very acute pain. These were dull and intermittent, with relief now and then as in intestinal obstruction. The animal was nearly always lying down, and at times would get up and move about as though there was nothing wrong with her.—(*Veter. Record*).

PERMANGANATE OF POTASSIUM AS A DRY DRESSING [*J. S. Wood, M. R. C. V. S.*].—The use of this drug as a powder applied on wounds seems not to be recommended in English textbooks, says the author, Finlay Dun remarking that in strong solutions it is irritant and caustic, and Tuson recommending it in the form of liquor potassæ permanganate for the treatment of fetid wounds. Mr. Wood recommends the powder as a dry dressing and finds it more effective under that form. For ordinary wounds he powders the crystals and mixes them with powdered boric acid in the proportion of one of the former to two or three of the second. With such, unhealthy wounds are quickly changed in aspect. It is also most advantageous in the treatment of open joints, as it stops the discharge, and protects the wound from external influence. It is essential to keep the wound as dry as possible on account of the irritation produced by strong solutions. The following is recorded as one illustration : A mare received a wound on the hock above the os calcis. Seen a few days after the accident, her leg is much swollen and there is abundant synovial discharge. For a few days continued cold irrigations were resorted to, when the wound took a very unhealthy aspect and the synovial discharge increased profusely. Irrigations were stopped and a little dusting of powdered manganese applied. The next day the discharge had stopped, a crust was formed over the wound. This was left undisturbed and when the leg was dressed two days later, the wound was found covered with healthy granulations and rapidly healing.—(*Veter. Record*).

CIRCUMSCRIBED TRAUMATIC PLEURITIS IN A MARE [*W. Scott, F. R. C. V. S.*]—This case is that of a mare which at a second visit made by the assistant of the author was found suffering with pleurisy of a traumatic nature. The animal had a punctured wound situated between the sixth and seventh ribs, midway between the vertebræ and the sternum, the wound being large enough to admit with difficulty one's small finger. The respiration was accelerated, pulse full and irregular, temperature 104.3 F. On auscultation there was an area of friction nine or ten inches in diameter. Suspecting the presence of a foreign body, the wound was enlarged, carefully searched, and closed antiseptically. It, however, suppurated, and took seven weeks to heal. As the repairing process went on the temperature lowered, respiration returned to normal and the recovery followed. The most interesting part of the case, however, is the peculiarities presented by the friction murmur that was detected in auscultation. Mr. Scott says: "It is invariably stated that the rhythm of friction is synchronous with that of respiration; this case in point proved that that statement is fallacious inasmuch as the rhythm of friction was continuous, while that of respiration of course was interrupted, although one could not hear at that particular spot the respiratory pause."

—(*Veter. Record.*)

THREE CASES OF INTERESTING FRACTURES [*W. Scott, F. R. C. V. S.*]—*Case I.*—An aged pony, which had shied, got whipped, made a plunge and became suddenly so lame that he was taken home with difficulty. The diagnosis of *fracture of the ilium* was readily made, and, after a fortnight's treatment, the animal was destroyed. At the post mortem the fracture was found through the shaft of the ilium, extending obliquely from a little below the center of the external tuberosity of the ilium to the internal border at about its middle between the internal angle of the bone and the cotyloid crest. *Case II.*—*Fracture of the right wing of the atlas* in a ten-months-old greyhound, received while playing with a fox terrier. The fracture extended from forward backward, from anterior to the posterior border. The treatment was as follows: "A piece of chamois leather was cut so as to form a hood, allowing two holes for the ears to protrude, which served the double purpose of fixation and covering; then a layer of cotton wool was laid over the dorsal extremity of the wing, and then a plate of sheet lead was placed firmly on and extended over part of the occiput and body of the atlas and bent under the left wing, thereby giving

at once fixation and consistence to the parts. Calico bandages soaked in potassium silicate were then wound around the neck, sufficiently tight to prevent movement; over all this a plaster bandage." Recovery was perfect. *Case III.*—This animal, a three-year-old heifer, had been under treatment for three weeks for post-partum paralysis. A diagnosis of hip-joint disease was made and the cow killed. At the autopsy extensive effusion round the coxo-femoral joint was found with a fracture of the great trochanter and head of the femur.—(*Vet. Rec.*)

A TROUBLESOME CASE OF ACTINOMYCOSIS [*C. A. Powell, M. R. C. V. S.*]—In this case the treatment by iodide of potassium has not proved as successful as it generally is. An eighteen-months-old steer was suffering with actinomycosis. The tongue was involved, it being badly indurated and one mass of ulcerations. The tissues underneath were also involved and there was extensive swelling of a hard character in the maxillary space. Of course, there was constant dribbling at the mouth. Treatment was begun on April 25th, and consisted in biniodide of mercury, six grains, twice a day. After a month, there being but little improvement, iodide of potassium was substituted for the mercury, two drachms twice a day. One pound of this being exhausted, great improvement was manifested, and again the biniodide of mercury resumed and kept up to August 9th, when recovery was complete.—(*Journ. of Comp. Path. and Thera.*)

DISEASED CONDITION OF THE OESOPHAGUS—TWO INTERESTING CASES [*H. Woodruff, M. R. C. V. S.*]—These relate to two animals, a mare aged eight years, and an old bay gelding, both of whom presented somewhat similar and yet different symptoms. The first, when fed on hay, would swallow two or three times, then give a slight cough and then emit food in a slimy condition from both nose and mouth. After a brief rest, she would resume eating and after a varying interval, one to 10 minutes, would show the same symptoms. Sometimes a whole feed would be taken and retained until, a few minutes after, a fit of coughing would occur and a varying amount would be thrown back by nose and mouth. The kind of food did not make any difference; water was returned almost immediately, without any cough. With these exceptions, the mare seemed quite healthy. The mare was destroyed and nothing was noticed except that the oesophagus contracted after death, the contractions occurring from 10 to 15 minutes after the mare was knocked down, and increased in force and duration whenever

the cardiac opening was touched. During the contraction the oesophagus became as hard and rigid as a tendon. In the case of the gelding, there was difficulty in swallowing, slow feeding, and the water was returned at once when the animal drank. On the course of the oesophagus there was a slight swelling about the middle of the neck, which was found to vary with the length of time since the horse had fed; that is, large and well marked just after a meal and gradually going away. A dilatation of the cesophagus was suspected and demonstrated by the introduction of a probang. No treatment was applied.—(*Journ. of Comp. Path. and Thera.*)

A QUARTER OF A CENTURY'S USEFULNESS.

[Editorial in *Journal of Comparative Medicine and Veterinary Archives*, April, 1902.]

Our esteemed contemporary the AMERICAN VETERINARY REVIEW has turned the twenty-fifth milestone of its existence in the journalistic pathway of veterinary medicine.

Given birth by the U. S. V. M. A., it served for many years as the chronicle of the work of the members of that organization, and accomplished much in attracting attention to the strength and work of many of the individual members of the national organization.

The first twenty years of its career it was most ably edited by that great teacher, writer, and supporter of college and association power, A. Liautard, who, in maintaining a higher curriculum for our schools, a broader field of journalistic work, added much at all times to the worth and scope of American veterinary literature.

Like many other scientific journals, it has never had the support of the veterinary profession that it deserved, and its editing and publication have been a matter of loving devotion to an adopted profession.

The high ethical standard established by its founder and chief editor for more than a score of years did much indeed to give standing and recognition to the birth and growth of a new profession in our country.

We wish for its present editorial direction and management the same grand results in the present cycle of years; a better financial support than it has ever had before; that it may not yield to any departure from the strong ethical lines it has well advocated, but in greater returns make broader and richer its field of usefulness in adding strength and value to future American veterinary literature.

SOCIETY MEETINGS.

PENNSYLVANIA STATE VETERINARY MEDICAL ASSOCIATION.

The annual meeting was opened at Odd Fellow's Temple, Philadelphia, Pa., March 4, 1902, and was called to order by the President, Dr. Harger, at 10.30 A. M. The following members were present:—Drs. W. G. Benner, Doylestown; John L. Bradley, Mercersburg; J. F. Butterfield, South Montrose; M. J. Chrisman, Sugar Grove; M. J. Collins, Myerstown; Jacob Helmer, Scranton; J. C. Kingsland, Canton; Jas. R. Mahaffey, Wilmington, Del.; S. W. Mathews, Concordville, Pa.; J. C. McNeil, Pittsburg; J. C. Michener, Colmar; Otto Noack, Reading; J. H. Oyler, Harrisburg; John B. Raynor, Milestown; Thos. B. Raynor, Chestnut Hill; W. L. Rhoads, Lansdown; W. H. Ridge, Trevose; J. T. Ross, Frankford; J. W. Sallade, Auburn; A. W. Weir, Greenville. The Philadelphia members present were J. M. Carter, H. B. Cox, H. B. Felton, J. T. Ferley, S. J. J. Harger, W. Horace Hoskins, J. D. Houldsworth, C. J. Marshall, Jas. T. MacAnulty, Leonard Pearson, E. M. Ranck. Visitors present were Drs. L. D. Horner, Woodstown, N. J.; F. H. Schneider, 9th and Tioga streets, Phila.; Chas. Lenhart, Dover; S. H. Johnson, W. D. Martien and George Fuller, of Phila., also Messrs. F. H. Bradley, A. H. Cheney, G. A. Dicks, G. V. Foster, W. D. Fuller, G. H. Hart, J. H. Morse, M. H. White, Jr., students at the Veterinary Department of the U. of Pa., also Messrs. George Snyder and George Teufel, Philadelphia, Pa.

The minutes of the previous meeting were read and approved.

President Harger then delivered his annual address, as follows:

PRESIDENT'S ADDRESS.

"My most pleasant duty at this moment, as your presiding officer, is to welcome you, gentlemen, to the twenty-first annual meeting of this organization. For a number of years we have met at the Veterinary Department of the University of Pennsylvania, but, on account of lack of necessary facilities, another meeting place has been chosen. This circumstance is expected to be only temporary, and, as in the past, so in the future, that institution will entertain the most friendly hospitality towards our organization.

"Our last semi-annual meeting, as we are aware, was held in Pittsburg. Considering the attendance, the meeting may be called successful. However, I cannot disguise my thought and think myself justified to say that 'absence' rather than 'presence' was personified, and I much regretted not to see many more familiar faces. The reason for this it may be difficult to surmise. There was ample food for body and mind and much more could have been called forth by a larger attendance. We are conscious of the benefits derived from organizations without repeating them here. We are acquainted with the advantages not only educational but also moral and political which this organization gives to the veterinarians of the State. I, therefore, hope that every one will take an active interest in our semi-annual meetings. The veterinarian who claims that he is too busy to attend is the very one who is best able to come to these meetings. He can afford it financially and is sufficiently strong in his community to survive the objections of his clients in leaving his practice.

"During the past year veterinary science has continued its progressive tendency, the different aspects of which will be discussed to-day by the reports of the several committees. The profound sensation created by Dr. Koch on the subject of tuberculosis, and familiar to all, has died a natural death; the negative evidence was so abundant that scarcely a former shadow of itself is left. Theories come and go with such rapidity that they can be accepted only after the most careful weighing of the facts. The more sensational they are, the more thought for their consideration before they should be accepted.

"The bacteriologist, biologist and microscopist still occupy the foreground. In fact, medicine might be called 'micro-organology.' Most advances have been made in this direction and the end is not in sight. We have only learned enough to know how little we know and, on the other hand, how careful we must be before accepting conclusions. Further investigations will clear up what are now obscure points. Veterinary education is more and more shaped to answer this requirement, and with the same purpose the veterinarian should keep himself informed upon this subject. I do not mean to say that every practitioner can be an expert bacteriologist and microscopist or that he must have a bacteriologic laboratory, but that he possess sufficient knowledge to make certain practical uses to which such work can be applied. Much can be done with the microscope, which every one should possess, but not always does. The

technique for applying it for ordinary purposes can be learned without much trouble in such cases as anaemia, leukæmia, leucocythaemia, blood parasites, anthrax, nephritis, etc., and a diagnosis possible only with such a procedure.

"The same interest is still maintained in sanitary science—meat and milk inspection and preventive medicine. A great deal of work has been done in this direction, and the character of this kind of work is not new to the veterinarian. The Federal Government has extended its work and increased its number of inspectors. A few individual States have done work in this direction. I believe that the veterinarians have worked and should work towards this end. They should bring the importance of this work, accompanied by facts intelligently demonstrated, to the attention of medical men and other influential persons of their community; their newspapers should be interested. This should not be done with the blare of a trumpet or a boastful audacity. These will create a reaction and excite antagonism. It requires tact, facts and persistence.

"In my previous address I spoke of the veterinarian's necessity to study the more industrial aspect of the domestic animals, judging their points for a particular utility, the special aptitude, their breeding, rearing and feeding, and to advise those in his community who look up to him as their superior. The times have not changed.

"I know that every veterinarian in the State is interested in the Veterinary Department of the University of Pennsylvania. This school was moved last fall from its old quarters to a new location. This may have given rise to the misapprehension that the school would be closed or relegated to a position secondary to that which it formerly occupied. This is not the case and hence my remarks. It is proposed to erect on the site on which are situated at present the temporary buildings, a large building that will, in architecture, conform with the other buildings recently erected by the University. The new school will be more conveniently located for its patrons and its equipments will be better than those of the old one. It will combine the most approved facilities for the several schools of Europe.

"I need not eulogize upon the progress of veterinary medicine. Its course is still on the ascent and I dare say few practitioners can complain of their lot during the past year. Every one appears to have enjoyed a reasonable degree of prosperity. That this was not local but extended over the entire country was exemplified by the National meeting in Atlantic City, which

by old members was said to have been the most successful in the history of that association from every point of vantage, numerically, professionally and socially. The numerous excellent papers indicate that the veterinarian is occupying himself with scientific work, that important results are accomplished for the good of the individual and the State and that evidently the veterinarian must receive a reasonable remuneration. The meeting was to us a striking example of encouragement.

"One of the essential conditions that has always promoted the success of this association is the harmony which has always existed among the veterinarians of Pennsylvania. This is a necessity towards success. As soon as internal strife develops in any organization its downfall can safely be predicted. Pennsylvania veterinarians have always looked at public questions in their broadest sense. They strove as one man, concentrated their energies in the same direction and even sacrificed themselves to attain results that redound for the public good. We may need new legislation, old laws may require to be amended, appropriations for State work are needed, the influence of the veterinarian in sanitary and live-stock problems must be pushed and our aim can only be accomplished by standing together and working as one man. The work which has been accomplished by our progeny, the State Live-Stock Sanitary Board and the State Board of Veterinary Medical Examiners, can be best appreciated by comparing their work with that accomplished in other States. We should be willing without any hesitation to give them any moral as well as financial support which they may require.

"It is with extreme sorrow that I speak of the death of one of our honorary members, Rush S. Huidekoper. We all knew him and I need not eulogize. He was perhaps the best known veterinarian in this country. He was a man of rare ability and intellect and devoted to his profession. His energies were ceaseless in raising our profession from its dormant state and his work will be most appreciated when he is no more. Kind of heart, he did not hesitate to do anyone a favor when it laid in his power. I have been under personal obligations to him during our acquaintance and always found in him a good friend. His decease was a great loss to veterinary science.

"Finally, when I am about to leave this office which has been entrusted to me during the past two years, let me extend my sincere thanks to this association. I have had my shortcomings in the administration of its affairs, which cannot now be

remedied. I claim no credit for what has been accomplished and perhaps much was left undone which should have been done. Every member has contributed his share of success. I wish to thank especially my co-officers for the energetic and reliable manner in which they have conducted their work, for which they deserve the highest credit. I know that my successor will meet with the same indulgence at your hands."

ELECTION OF OFFICERS.

The following officers were elected for the ensuing year:

President—W. L. Rhoads, Lansdowne, Pa.

First Vice-President—J. F. Butterfield, S. Montrose.

Second Vice-President—A. W. Weir, Greenville.

Third Vice-President—W. G. Benner, Doylestown, Pa.

Treasurer—Francis Bridge, 228 N. 63d St., Philadelphia.

Recording Secretary—C. J. Marshall, 2004 Pine St., Philadelphia.

Corresponding Secretary—E. M. Ranck, 422 N. 41st St., Philadelphia.

Board of Trustees—Leonard Pearson, 36th and Spruce Sts., Philadelphia; W. H. Hoskins, 3452 Ludlow St., Philadelphia; Thos. B. Rayner, Chestnut Hill; W. H. Ridge, Trevose; N. Rectenwald, 89 Washington Ave., Pittsburg.

MISCELLANEOUS BUSINESS.

A recess was then given for the collection of dues. After adjournment a report of the Board of Trustees was called for. Dr. Pearson requested that his report be postponed. Dr. Harmer requested leave of absence for an hour. Dr. J. C. Michener took the President's chair during his absence. Reports of County Secretaries were then read by the Corresponding Secretary, Dr. Ranck. Report of delegates to the American Veterinary Medical Association meeting in September last was given by Dr. Hoskins. Drs. Hoskins and Noack urged dropping of the clinics at the American Veterinary Medical Association meeting. Veterinary Medical Association of New Jersey—Dr. Pearson made a few appropriate remarks. New York State Veterinary Medical Society—Dr. Carter was called. He did not attend the meeting, but reported that the late Dr. R. S. Huidekoper had represented the Pennsylvania veterinarians at the meeting at Ithaca. Dr. Ranck spoke of the Dr. Morris affair at Atlantic City and what had been done by the A. V. M. A., and also what had not been done by the New York State Association, and asked Dr. Hoskins for an explanation. Dr. Hos-

kins reported that Dr. Huidekoper attended this meeting and said nothing definite was done. The Association dilly-dallied with the subject and the main effort seemed to be to avoid the issue and the question was laid over for one year. He feels the Association should be censured for its cowardice and will introduce a resolution later to this effect. Keystone Veterinary Medical Association—Dr. Ridge and Dr. Marshall spoke of the good work this Association was doing, and urged more frequent attendance at local associations by the local men. Schuylkill Valley Veterinary Medical Association—Dr. Schneider was called and gave the following report:—"This association was formed six years ago. They now have 30 active members and meet quarterly. The last meeting was held last December. Some very good papers were read." Dr. Pearson thinks many other veterinarians would attend these meetings if they were invited. He suggested that the *Journal* would be glad to print notices if received in time. Noack said they used to send invitations broadly, but as few accepted them they had discontinued it. Dr. Ranck says a secretary is not excusable if every veterinarian, every newspaper and journal of note do not have notices even if they do not attend or send representatives. He thinks we should be generous with our invitations. Noack thinks it is an unnecessary expense to send invitations to those who would not attend. Ranck suggests that the proceedings should be printed. Noack says reports were sent to Dr. Hoskins and not answered. Hoskins thinks not, and was defended by Ridge, who says that Dr. Hoskins always answers letters promptly.

The treasurer's report was then read by Dr. Bridge. Dr. Hoskins thinks the condition of our treasury is open to improvement. He thinks the money should be used for the benefit of our Association and urges that it be distributed for the benefit of our profession throughout the State.

REPORTS OF COMMITTEES.

Dr. Ranck read a report from Dr. Sallade, of the Committee of Legislation. He suggests that all veterinarians should register every three or six years. Noack said a bill was introduced by the Schuylkill Valley Veterinary Medical Association, that the laws of 1889 were faulty. The new bill was to amend the old one of 1889, whereby all veterinarians would be required to register again. He read the proposed amendment. Dr. Hoskins read a report of this Committee and urged the importance

of re-registration. By a re-registration money might be obtained for carrying on the work of prosecuting illegal practitioners. Three prothonotaries have been called before the courts to show that certain unwarranted registrations had been made by them. Two men are now serving time and two others are being prosecuted. He hopes that Dr. Noack's paper be presented to our Committee on Legislation and that soon action may be taken by this Association. Letters are being sent to the prothonotaries of different counties to have the lists of registration verified. Dr. Pearson mentioned the act passed by the last legislature to provide for the milk supply of cities of the second class. He thinks the trend of this bill was good, but a little too bold. This law has not been put into effect by a single city. The authorities are afraid to put it into operation. It was drawn up by physicians of Pittsburg, who lack practical experience. This shows the need of proposed legislation being thoroughly considered by men of practical experience prior to being offered to legislative bodies.

No member of the *Committee on Intelligence and Education* being present, the work was laid over until later. Dr. Pearson thought it was too important to pass over this subject and offered a verbal report. He described the changes being made at the Veterinary Department of the University of Pennsylvania. The reasons for the changes were twofold, the growth of the U. of Pa. was so great that our school was being hidden. Second, the medical department wanted a somewhat obscure place for a \$600,000 building. The architects are now working on the plans for our new building, which will be a three-story building, where plenty of room will be obtained, and one suitable room for the use of our Association. The plans are for the best-equipped school in any English-speaking country.

The report of the *Committee on Sanitary Science and Police* was passed over for the present.

Committee on Animal Husbandry.—Dr. Ridge was called as a member of this committee, but made no remarks. Dr. Pearson spoke of the bill before Congress for the purpose of certifying to the qualifications of stallions suitable to get cavalry horses, this committee to be composed of practical horsemen. The general purpose of the bill is to be similar to the Imperial Horsebreeders' Association of Europe. The trend of the bill will be useful if it becomes a law. Our horses are, generally speaking, becoming nondescripts, and we should breed for some

specific type. The object of this bill is to encourage the breeding of a class of horses suitable for cavalry uses. Older countries have found this plan necessary. Similar commissions are bringing them good results. A weak point of the bill is that as it now stands it is composed of six officers and 12 practical horsemen, but no veterinarians. We feel that our profession should be represented, as the veterinarian's training and experience is an essential factor and safeguard to this line of work and we should spare no effort in making this fact patent to those concerned before it is too late. The matter is before a committee in Congress. Wadsworth, of New York, is chairman of the committee. There is one member from Pennsylvania on this committee. Dr. Bridge moved that this subject be referred to the Committee on Resolutions. Dr. Rhoads offered an amendment to have the subject widened if possible, to make it more general. That ended the afternoon session.

EVENING SESSION.

After the banquet, the President called the meeting to order at 8 P. M.

Dr. Marshall made a report for the *Committee on Sanitary Science and Police*, which was adopted as read.

Dr. J. C. Michener made a report for the *Committee on Animal Industry*, which was filed with the Secretary.

Dr. Thos. B. Rayner discussed the paper, and cited a case where a whole herd was tested with tuberculin and every animal reacted and was sold clandestinely in Bucks Co. As the former owner was a millionaire, he did not see that he was excusable for this unappreciated philanthropy. Dr. Pearson spoke of the difficulty of estimating the value of animals in the United States, and explained why there was so much difference in the reports given out by the Bureau of Animal Industry and the one given out by Sequard Powers, of Chicago, and the Census Bureau. This subject was discussed by several members, and it was decided that the *American Agriculturist* gave the most satisfactory statistics. He thought there was a lack of horses in the United States. There did not seem to be enough to supply the demand. The report from the B. of A. I. for 1900 has been challenged; cause due to the difference of opinion between the B. of A. I. and the Superintendent. Dr. McNeil, of Pittsburgh, in speaking of the average price of working horses, said that he did not believe they could be bought for \$55 a head. They are not as cheap as formerly. He thinks there is an advance of \$20 or \$30 a head on car-load lots more than last year.

Dr. Hoskins explained why the average price was so low. In making up the average price of horses, bronchos and cheap Texas horses are figured in this average. He thinks there is no doubt but what the price of good horses is higher than it had been for years. He prefers to believe the statement made by the Census Bureau than by the Department of Agriculture. The vast numbers of horses sent to South Africa has taken out the cheaper class. Dr. McNeil says the Texas pony is nearly extinct. The same is true of the native cattle of Texas, as Texas cattle are mixed with the Northern cattle and are becoming larger and more suitable for beef purposes. Dr. Rhoads moved that this report should be accepted as read, which met with the approval of the Association.

The next subject was the admission of new members. There was but one candidate. Dr. Hoskins, as a member of the Board of Trustees, thinks that one application is small fry for the Board, and that we should make greater efforts to bring in new members. Dr. Felton agrees with Dr. Hoskins. Geo. S. Fuller, of Philadelphia, was elected as a member of the Association by acclamation, and was introduced by President Harger, and made a few appropriate remarks.

The next in order was "new business." Dr. Ranck reported and read a letter from Dr. Bittles, who pays dues to March, 1902, and requests that his name be dropped from the list. Dr. Pearson moves that the letter be reported to the Board of Trustees. Dr. Rhoads speaks of the vast amount of work which devolves on the Corresponding Secretary and proposes that \$50 be appropriated to the Corresponding Secretary for his work. Dr. Hoskins spoke in favor of the motion. He thinks that a certain sum of money should be set aside for the use of the Corresponding Secretary. The motion was adopted.

Dr. Rhoads thinks we should have a Press Committee of seven members, and makes a motion to that effect. He thinks that they should be appointed by the President so they can be chosen from sections of the State where the meeting is to be held. Noack thinks that cartoons and ridiculous appearing pictures should not accompany the reports of our Association as has been done times in the past. Dr. Hoskins thinks that Noack's objections are one reason for having a Press Committee, and that with such a committee we could put such subjects as we wished before the public.

Dr. Hoskins thinks that our State Meat Inspection is the greatest farce of modern times, and thinks under the present

system that we should recommend Western dressed meats in preference to our city dressed meats, and suggests this subject for the consideration of the Press Committee. This is a subject that ordinary newspaper correspondents cannot do justice. Dr. Williams agreed with the other speakers, but thinks it is difficult to get any satisfaction from the present administration or from the newspapers. Dr. Ranck then read an application from Dr. H. B. Cox, of Philadelphia, who was elected to membership. In reference to meat inspection Dr. Pearson thinks that influence may defeat any recommendations we may make because the city officials fear that a large sum of money would be necessary to carry on this work. If a tubercular case is condemned it is for the use of the public and the public should help bear some of the loss. Would it not be better to establish a public fund and remunerate partially the loss? It might come from State, or counties or cities. Under the present appropriation it is not possible for the state to pay for all tubercular animals. If this could be done Dr. Pearson thinks the butcher would hail the meat inspection service because then the condemned animal would not be an entire loss to him as it is at the present.

Dr. McNeil asked how much it would cost the State to pay for the cases during the past year. Dr. Pearson says it could not be answered accurately as it would not be necessary to have all tubercular meat condemned. Dr. Hoskins says that under the present system of meat inspection that after 2 o'clock P. M. the federal inspection is declared off and no inspection for the balance of the day. The suspicious cases are kept by the butchers and dressed during the time of no inspection and that the greatest difficulty he encountered in his late mayoralty campaign was his opinion of the city meat inspection. Dr. Michener recommends that Pearson's plans be advocated by utilizing in some way the reacting animals. Local butchers are often caught with tubercular cattle and these losses are dropped back to the farmer. Some provision should be made to overcome this trouble, but the only remedy is an appropriation of more money to carry on this work.

Dr. McNeil recommends that a committee of five be appointed for the purpose of devising a better system of meat and milk inspection. Dr. Ranck suggests that seven would be a better number. This was accepted by Dr. McNeil. He thinks it would cost Philadelphia \$400,000 a year to carry on a proper meat and milk inspection. Dr. Ranck asked if the work carried on by McNeil's proposed committee would not properly

fall to our new Press Committee. Rhoads seconds the motion, which was adopted.

Dr. Rhoads asks for an explanation of what was done with the money appropriated by the Association last year. Dr. Hoskins said in answer that the \$200 appropriated last year has not been touched, owing to the bad statements made by certain members at that time.

The meeting was adjourned at 9.30 to meet at 10 A. M. the next day. Before adjournment Dr. Rhoads spoke about the remarks made by him last year in reference to this appropriation. He still believes as he did at that time that it is proper to appropriate the money to be used by the examining board, but objected to the way in which the motion was carried out.

WEDNESDAY, MARCH 5TH, 1902.

The meeting was called to order by President Harger at 10.30 A. M. Among the letters read by Dr. Ranck was a request to be dropped from membership. It was referred to the Board of Censors. Dr. Jobson read a report from the Committee of Animal Husbandry. Report is filed with the Secretary. A report from Dauphin Co. by Clinton F. Keiter and one from Venango Co. by S. J. Swift was read. Dr. Jacob Helmer read a very carefully prepared report as Chairman of the Committee on Intelligence and Education. This was one of the most thorough and complete reports ever made by this committee. Dr. Rayner made a motion, which was unanimously adopted, that a vote of thanks be extended Dr. Helmer for his excellent report. Dr. Hoskins moved that a permanent committee on membership be appointed, which was carried out. Dr. Felton in discussing Dr. Helmer's report wanted to bring special attention to the report gotten out by Brimhall and Wilson, of Minnesota, on the subject of "Hæmorrhagic Septicæmia." He also spoke in favor of having a permanent committee on membership.

Dr. Remington, a representative of E. R. Squibb & Son, of New York, wished to explain to the Association the advantages of using acetic acid preparations. Some of the members objected on the ground that it would be establishing a precedent to allow instrument makers and drug firms to present this kind of subjects to the Association. After a thorough discussion of the subject by the members, it was decided that it was for the advantage of our members to have an opportunity to learn of the best forms of drugs and most useful instruments. Consequently Dr. Remington was given the floor and described fully

the advantages to be derived from acetic acid preparations; that they would be cheaper for our use and fully as reliable as the alcoholic extracts that are universally used at present. Dr. Helmer, of Scranton, asked Dr. Remington the prices of some of the acetic acid preparations, and claims that he had not found them to be any cheaper than the ordinary preparations and he also objected to their use on account of the smell.

PAPERS.

J. F. Butterfield, of Montrose, read a paper on the subject of "Calculi." * His paper was thoroughly discussed by Drs. Helmer, Harger, Rayner, Felton, and others. Dr. Helmer moves that a vote of thanks be given Dr. Butterfield for his valuable paper. Motion was carried.

Owing to the absence of Dr. Philips, his paper on the subject of "Abortion" * was read by Dr. Ranck. Dr. Ridge, in discussing this paper, thinks that the subject is a very important one. Many farmers are discouraged on account of this trouble in their herds. He advises the use of a subcutaneous injection of a 5 per cent. carbolic acid solution, $1\frac{1}{2}$ drachms for a dose, and a thorough disinfection of the stables, premises, animals, and isolation of the cows that abort. He finds with the most rigid treatment that he is often unable to check the trouble. The subject was also discussed by Drs. Eves, Benner, Hoskins, Michener, Pearson. Dr. Pearson thinks that the difficulty in treating this trouble is due to the fact that the origin of the disease has not been discovered. The infection seems to be carried by the bull. He thinks that the carbolic acid treatment is of very little use. He thinks the most satisfactory treatment is obtained by application of local antiseptics to the genito-urinary tract of both bulls and cows. Many cows acquire an immunity to this trouble in two or three years. Nutrition of the animal seems to be an important factor in the progress of this trouble. Michener says that cows before abortion show symptoms of uneasiness, and if watched carefully by the owner they can be picked out from the herd. He recommends giving 20 drops of tincture of aconite every two hours until the symptoms abate. Follow this by 26 drops two or three times a day after the first day and in few cases they lose the calf. Dr. Ridge differs with Dr. Michener and says that no premonitory symptoms can be discovered. Dr. Helmer speaks of the difficulty in isolating cases of this kind and thinks our treatment

* Will be published in an early number of the REVIEW.

would be much easier if sheds or suitable quarters could be provided. He believes thoroughly in isolation, antiseptics and disinfection, and believes also that this form of treatment should not be entrusted entirely to the owners, as they are often not competent to carry out the work properly. Dr. McNeil reports a case of abortion in a brood mare that occurred three times in succession. He diagnosed this case endometritis, treated her with iodine; she was bred afterwards and gave birth to a healthy foal. He gave $1\frac{1}{2}$ drachms of the undiluted tincture of iodine once each week for a month.

Secretary Ranck read Chas. W. Boyd's paper, "Rupture of the Flexor Tendons as a Complication of Azoturia."* His paper was discussed by Eves and Michener. Dr. Martein spoke of a similar case which was complicated with osteoporosis. Dr. Carter cited a similar case. Dr. Eves thinks it is rather doubtful that a case can contract azoturia if they have osteoporosis. He thinks their nutrition and condition is not usually such as to predispose to azoturia.

H. P. Eves, of Wilmington, read a paper entitled "Peculiar Symptoms attending Certain Forms of Colic." In his paper he speaks especially of the symptoms noted by the essayist and a few other practitioners of the peculiar squeaking of the joints in indigestion colic. He says it affects all the joints in the body, and says that it resembles the cracking of the joints in the hands of men. Dr. Helmer says that he has observed this condition in horses that are neither sick nor lame. Eves says this condition is not noticed in all cases of impaction colic, but in the cases in which he has observed this condition the creaking of the joints ceases when the case recovers from colic. President Harger suggests to Eves to study this subject more fully and report to our meeting at some future time. Dr. Jas. T. Ross spoke of the good results he has obtained in bleeding cows that could not get in calf. He removes six or seven quarts of blood.

Adjourned for lunch at 1.30.

The meeting was convened at 2.30. Dr. Jas. Mahaffey's paper was the first on the program. His subject was "Azoturia." His paper was well prepared and excited an interesting discussion of the subject. Rayner believes that treatment of azoturia consists in its prevention. He advises his clients to sit on a fence and read a newspaper as soon as the symptoms of azoturia appear. Dr. Ridge agrees with Dr. Rayner's idea in reference to

* Will be published in an early number of the REVIEW.

resting the animal as soon as the first symptoms are noticed. Dr. Benner says the man who tries to imitate nature is most successful, and speaks of fact that animals in pasture are inclined to rest or stand still rather than to move about after such trouble. He agrees with Rayner and Ridge. Dr. McNeil notices most cases occur in animals which have stood still for two or three days. Dr. Mahaffey asks why it is that this disease occurs oftener in winter than in summer, and thinks that the cause must be due to chill. Eves thinks that the reason for this is that the horses do not stand still in the summer; if not working they are fighting flies or moving about. Dr. McNeil thinks profuse sweating in the summer also helps to prevent this trouble; also that horses do not drink as much water in winter as summer. Dr. Benner says one of the worst cases he ever had was in summer. Dr. Michener thinks azoturia is caused by coagulation of the blood and that exercise is the best treatment. Dr. Weir believes the trouble in his part of the country the past winter in this line was due to the feeding of too much corn. Helmer claims that there are two varieties of azoturia; the one in the country is much less severe than the form usually seen in the cities. Dr. Fuller thinks that food does not play so important a part as exercise, and recommends nitrate of potash in small doses twice a week as a preventive.

Dr. J. M. Carter then read a paper on "Municipal Milk Inspection." Dr. Ridge agrees with the essayist from the veterinarians point of view, but felt from a producer's standpoint that it was entirely too finely drawn, and would recommend that the Association adopt a happy medium in treating this subject. Dr. Mahaffey thinks that the essayist has exaggerated this subject. Dr. Williams thinks the paper was too close to the facts as they exist and feels that it would be safe to discuss this subject among ourselves in the same manner as the essayist has treated the subject, but in discussing publicly, he thinks it preferable to keep on neutral grounds. Dr. Michener thinks Carter did not exaggerate the subject. He thinks if anything, conditions are worse than he described. He described many disgusting conditions that he had met in his experience, and thinks that strong remedies should be applied to overcome the present system of handling milk.

Eves is in favor of making this subject public so everybody can know the true facts in the case. Dr. Helmer said that it is difficult to prevent outbreaks of contagious diseases due to contamination of the milk supply by legislation, but thinks that

the public should be protected as much as possible from the dangers in handling milk in a careless way. Dr. Butterfield considers that the conditions for handling milk are much better than they were a few years ago, but yet there is much chance for improvement among the ordinary milk dealers and farmers. Dr. Rhoads finds that conditions have improved very much in Chester Co. in the past few years, but many stables are yet so filthy that it is difficult to treat cases in them without becoming contaminated with stable filth.

The next was a paper by Dr. Pearson on the subject of "Assertions Made by Prof. Koch in London at the International Congress on Tuberculosis." A vote of thanks was extended Dr. Pearson for his interesting paper on the subject.

The next was the adoption of eleven resolutions, which will be published in an early issue of the REVIEW.

Dr. Pearson moved that Dr. Rhoads be appointed archivist, which movement was adopted and carried.

Dr. Rhoads made a motion, which was carried, that the selection of a meeting place be left to the Board of Trustees. He also moved that a renewal of the appropriation of \$200 for the State Examining Board be granted. This was carried without debate.

Dr. Pearson moved that a rising vote of thanks be extended the outgoing officers for their efficient work.

Next in order was the seating of new officers, after which the meeting adjourned to meet in September.

E. M. RANCK, *Corresponding Secretary.*

CHICAGO VETERINARY SOCIETY.

The April meeting of this society was called to order by Dr. Hawley, President. Thirteen members were present. Minutes of the previous meeting were read and approved. Secretary's report read and approved.

Dr. Quitman stated that in his opinion there would be fewer delinquents in the matter of dues if a statement were sent to each member showing their indebtedness to the society. He said that he did not know whether his dues were paid or not, as he had received no statement. (He was informed that they were not paid for the present year, and he very promptly paid them, three or four of the other members following his example.) He said that his own case was only an instance of how the matter stood with the other members. If they received a bill for dues they would invariably pay them, but if they let it run

along for three or four years they thought it not worth while bothering with, and would drop out of the society. No motion was made in the matter.

No report was rendered from any of the committees and no unfinished business taken up.

The regular programme was to have opened with a paper by Dr. Hughes, but he informed the members that he had been too busy to prepare it and would have to be excused.

At the suggestion of Dr. Hawley, a programme was, as he termed it, invented. The question of counter-irritation in the treatment of horses suffering from pneumonia was decided on as a subject for extemporeaneous discussion. The members present arranged themselves as follows: In favor of counter-irritation : Drs. Baker, Hughes, Allen and Quitman. Against : Drs. Campbell, Clancy, Robertson, Ryan and Hawley, the other members taking neither side. The question proved to be most interesting, and brought out the liveliest debate listened to this year.

Under the head of new business it was announced by Dr. Hawley that there was something like \$200 in the treasury and he suggested that the society come to some decision as to what should be done with the surplus. A long discussion followed and a great many suggestions were offered. One was that the society make an offer to the International Live Stock Exposition of a silver cup to be presented to the exhibitor of a sweepstakes draft horse raised in this country. This was objected to by many for the reason that the precedent once being established, the society would have to present a cup each year, and the society might not always be as wealthy as at present. Also it was thought that the Live Stock Association would not be willing to comply with the conditions of the presentation, which of course would be that the judges for that particular class be chosen from the veterinary profession of this city. The suggestion, however, which seemed to gain the most favor was that the money be spent for a banquet to close the season. Dr. Clancy stated that for four long years the society had struggled hard to get that surplus. He could not remember a time in its history that the treasury had showed so large a surplus, and he could see no good reason why it should be spent now. Something might easily arise which we knew nothing of at present for which funds would be needed, and if the treasury was to be emptied now the members would never want to go down into their pockets for special assessments. It was finally moved and seconded that a banquet be given in conjunction with the May

meeting, cost of same to be borne by those attending the banquet and to be limited to \$2 per plate. The motion was carried. The next motion, which was carried, was that \$35 of the treasury funds be set aside for extras in connection with the banquet. The entertainment committee was then requested to prepare a suitable programme and make the necessary arrangements for such a meeting. It was also suggested that veterinarians, not members of this society, be invited to contribute and be present at the meeting, though no vote was taken on the question.

The meeting adjourned at 11.05 P. M.

DISCUSSION OF COUNTER-IRRITANTS IN PNEUMONIA.

Dr. Ryan: My experience leads me to the non-use of external caustic preparations for pneumonia. I believe, though, in external stimulation. Strong counter-irritation has not been a success in my hands. I have used mustard and strong liniments, and I know I get along better with weak liniment applied two or three times a day as a stimulant rather than an irritant. For that reason I don't believe in counter-irritation. In a great many cases of pneumonia or where there is a tendency toward pneumonia I have found a great deal of hydrochloris. I believe this is induced more from counter-irritation than anything else. It certainly appears so to me, for since I left off its use I have not seen so many results of that description, in my practice. I do not mean to classify counter-stimulation with counter-irritation. But counter-stimulation seems to set up a better circulation. You have to induce stimulation all over the body. I believe you can do this with external stimulation much better than by internal stimulation.

Dr. Hughes: I think Dr. Ryan should take a seat on our side. However, I think the term counter-irritation should be thrown out of the veterinary category. It is a term we should try to avoid and I do try to avoid it as much as possible, but it creeps up with great regularity, with the result that I think it is pretty hard to down. It is a misleading term. When we continue to use such a term we are going back to the old practitioners of 50 or 60 years ago. They believed that the application of an irritant to the surface of the body produced an irritation which counteracted a more deep-seated one, and drew it to the surface. That is a thing which we all know is absurd. We do not think that by applying an application to the outside it draws an irritation from within to the surface, for it does not. It rather increases the blood supply. We do not draw it away

from the area inflamed, as a blister, we merely diffuse the blood generally all over the body. Dr. Ryan, in my opinion, has proved quite an irritation advocate, for this stimulation is, if you please, counter-irritation. He says he places an application which draws the blood to the surface—diffuses it all over the body. We all do that. Given a case of fever: the animal is breathing rapidly, the temperature 106 or 107, pulse 72, with all the symptoms of an early stage of pneumonia. I say that the application of a brisk or smart stimulant to the surface of the body will draw the blood to the surface and diffuse it through the system generally and alters the condition of the lung. With medicine we must break up a chill, a pail of water, a blanket or two and a strong stimulant. I am in favor when I meet such a case to send on a liniment that will make a horse "stand on his head" for five or ten minutes. If I find him raggering around the stall I am pleased. I can reduce temperature in five or six hours without medicine. On that account I say stimulate by all means. Do not counter-irritate. Do not put on a strong caustic application that will cause edema and effusion under the skin that will stay there a day or two or even three and obstruct your auscultation that may have to follow. Should the case run into pneumonia keep up the stimulation sufficient to take the hair off and keep it up, two or three times a day, but no irritant.

Dr. Robertson: I cannot agree with Dr. Hughes. The question we are debating is the treatment of pneumonia, where pneumonia has been established. In the early stages, that is when the horse shows signs of pleurisy, or we suspect pneumonia, then the application of stimulants as to the pulse is all right, but when we have a case of pneumonia that has been running for several days and the horse is in great pain, counter-irritation in that way does very little good. I think if the horse is warmly clothed, and properly sheltered from draft and receives proper internal treatment, that any additional pain you may cause the horse at that stage simply aggravates the trouble. I think during a chill these applications are proper, or in pleurisy they are all right, but when pneumonia is fully established in a horse these painful applications are just adding so much to the horse's misery. The proper clothing of a horse will stimulate the body of itself, but I cannot see the benefit of aggravating the horse with irritants or stimulants applied externally. Some practitioners do not seem to think that the horse is in such a condition that he cannot stand any more pain. But

when the horse is first taken sick I think they are all right.

Dr. Quitman : I thought I was going to keep out of this, but since the house is divided against itself, I will say that I most emphatically believe in local stimulants. I do not believe in exciting counter-irritation as is used in burning the horse for two or three days, but there are two or three conditions in pneumonia that I think call for local stimulants. In the first place, I would call attention to the physiological action of local stimulants. An extraordinary amount of blood in the pores of the lungs stimulates the sub-adjacent blood vessels, resulting in their contraction. When we say pneumonia, that refers to all stages of pneumonia, and I believe we all consider the congestive stage as the first stage. There is no doubt in my mind that local stimulation or counter-irritation will in a great many cases, if the case is not too severe, or if it is in the first stage, avert a full attack of the disease, if used in conjunction with proper treatment. Another condition is a case where the temperature, pulse, etc., seem to be at a standstill. In all such cases I believe the application of a smart local stimulant will bring good results. In many cases the temperature will drop from two to three degrees. The other condition is where the disease has progressed against you ; the temperature is coming up, or is already very high, and the horse is very weak. In such a case as that, the application of a moderately severe local stimulant will result in the stimulation of the heart, bringing immediate improvement in the case. I cannot but fully endorse the application of local stimulants.

Dr. MacKellar : I fear that my opinion is not worth much against these gentlemen, but I can only protest for the animal. A horse sick with pneumonia is naturally suffering a great deal of pain. To put on a counter-irritant or stimulant, that is strong liniment or mustard, just adds to the animal's suffering. Another point is that the natural function of the skin is to help out the lungs. If the lungs are diseased those functions are needed more than ever. If you cover up the skin with mustard plasters or nasty, sticky oily liniments, you just hinder that function. I have not heard anyone refer to the oil-cloth jacket. We have used that with great success in the East. It is an ordinary oil-cloth or muslin jacket placed around the thorax. We also used silk bandages and warm clothing.

Dr. Baker : I have listened to this debate with a great deal of interest, but I think, with the exception of the suggestions made by Dr. MacKellar, that the objections to the theory of

counter-irritation are rather weak. You simply oppose it without anything in its place. Dr. MacKellar suggests the oil-cloth jacket. I presume he assumes that this takes the place of the poultices used in human practice. A few years ago you remember there was a sort of a revolution against counter-irritation. Prior to that time they had been using plasters for all troubles. Then they turned from one to the other extreme and used softening preparations, covering the whole chest with softeners. They discarded the counter-irritant and stimulant entirely. Now, during the last four or five years they are gradually going back to the old practice, not to the same extent, perhaps, but to a moderate extent. The line between stimulation and vesication is rather indefinite. It is simply a matter of judgment how far you can carry it. Some people think that if a little is good much is better, and if the physiological action of counter-irritants has the effect of drawing the inflammation or superfluous amount of blood to the surface why would not the application of strong stimulants, even to the extent of vesication, do it to a greater extent; so it is just a question of judgment how far you can carry stimulation. The next thing is the physiological action of the counter-irritant. Local external stimulation resuscitates or revivifies the failing nervous action, so that the action of the counter-irritant is reflex, almost entirely, as far as its effects are concerned. It brings additional blood to the surface. That increases the circulation and relieves the internal organ that is congested. At the same time it increases the radiation of heat, while to prevent too rapid radiation we clothe the horse warmly. That does not lessen radiation, but lessens the rapidity of it. We get the same effects with blankets that we do with the irritants, but it takes longer. That is the chief virtue, I presume, in the oil covering. Instead of that a great many use cotton batting, or newspapers or woolen blankets. These all encourage radiation, but so slightly that it is imperceptible.

Dr. Hawley: My views are pretty rabid in regard to counter-irritation. I do not believe in them. The term counter-irritants takes in all irritants or stimulants. Some we call mild irritants, some heroic. They are all irritants, and I am against all of them. I have had some actual results. I have kept a record of a great many cases. In the first place, it is a well recognized fact that pneumonia is a specific disease and one that runs its course in spite of all you can do. Certain conditions occur in the horse, and if there is a sufficient amount of lung

tissue involved, that horse will die. Certain other conditions occur in other horses; the lungs are not affected to so great an extent, and they live. Of course, the first thing to do when we are called to a patient is to make a diagnosis. This is perfectly easy for any one who has had a little experience with pneumonia. The next thing is the prognosis, which is just as important, or more so than the diagnosis. If you can say "that horse has pneumonia," and that he will live, and it will take him so many days or so many weeks to recover, and you are right, you have made an impression on the owner of that animal, and he will employ you again. Now, you will find quite a difference between treating your own horses and those of other people. I had 16 cases of pneumonia in my own horses at one time, and there was no question of its being pneumonia. We had pink-eye and other diseases in the stable besides, but we had 16 cases of pneumonia. As an experiment eight of these horses were treated with medicine, and the other eight without medicine. All of the 16 cases recovered and those without treatment did just as well as the others with treatment. Now, then, what are you going to arrive at? Probably there is more pneumonia at the Stock-Yards than anywhere else in the city. The animals get it during shipment, and after arrival. The old treatment was mustard. Now they are treating a good deal without mustard, but people have been educated to counter-irritants for pneumonia. In some cases if you don't use it the owners use it themselves. They get scared because the horse gets worse, and put it on without calling you.

Dr. Quitman then replied to Dr. Hawley, stating that he had no way of telling whether or not it would have been possible to have warded off a full attack of pneumonia in the eight cases which he treated without irritation.

Dr. Hughes cited a case in his own experience at the Yards where a horse was very sick. It was a horse brought here to be exhibited at the International Live-Stock Show. The horse had a bad case of pneumonia, and breathing hard. He ordered a smart irritant applied, and with proper treatment the horse was able to go on and show the following afternoon, and carried off first prize in his class.

Several of the members answered Dr. Hughes by stating that his was not a case of pneumonia, but simply a congestive chill; that he had given the horse a sweat and broken up the chill, and possibly warded off a case of pneumonia, but had not had pneumonia to deal with.

AMERICAN VETERINARY MEDICAL ASSOCIATION.

Since the announcement made in the May REVIEW, the following have promised papers for the Minneapolis meeting : M. Jacobs and W. C. Rayen, of Tennessee ; Professor D. McEachran, of Montreal ; Dr. Leonard Pearson, of Philadelphia ; Dr. J. J. Repp, of Iowa, and Dr. S. D. Brimhall, of Minnesota.

The passenger associations have granted the accustomed convention rate for this meeting, so that all may be assured of the concession.

The Chicago veterinarians are taking a deep interest in the coming meeting and plans are under way for those who would pass through that city to unite in a party and journey by special train. The following letter from Prof. Baker explains this effort :

CHICAGO, Ill., May 23, 1902.

Dear Doctor Bell :

With the view of helping to make the next meeting of the A. V. M. A. at Minneapolis a grand success, and of trying to enhance the pleasure and comfort of those attending that will pass through Chicago, Dr. Hughes and I are making arrangements with the Chicago, Milwaukee and St. Paul Railway to furnish special sleepers, and if the crowd is large enough, a special train, from Chicago on the night before the opening of the meeting, and we have written to each State Secretary informing them of this fact. Chicago is a point through which most of the members will pass on their way to Minneapolis, and we think it will be very pleasant to have the crowd gather here and go up together. We can get first-class accommodations and all of the privileges we may wish to ask for. Circulars will be sent later on to every member of the Association informing them of the plan and also some to each State Secretary for distribution to prospective members and visitors.

Hoping that you will do all in your power to make our plan a success, and that we will have the pleasure of seeing you here while *en route* to Minneapolis, and with kindest regards, I remain,

Yours very truly,

A. H. BAKER.

Secretary Stewart has issued the following stirring circular to members :

DEAR DOCTOR :—A message for *you*. A great meeting of veterinarians will be held in Minneapolis, Minn., next September and you are invited to have a part in it. This will be the thirty-ninth annual meeting of the American Veterinary Medical Association, and it will be worth more to you than any previous meeting, because—first, the American Veterinary Medical Association is a progressive organization ; next, the meeting is to be held in a section where the members of the profession are noted for their activity in the veterinary field ; again, the veterinarians of the several provinces of Canada as well as of the states of the central west have said they will help to make the Minneapolis meeting a record breaker in quality and quantity ; further, the

twin cities of the north possess many things which delight and entertain visitors; and last, but not least, veterinarians will gather there from all parts of the American continent—class-mates and old time acquaintances—those whom you have learned to respect through their contributions to American veterinary literature—those who have helped you by reporting their experience in practice. By gathering with them you can secure the priceless boon of fellowship, fraternity and professional comity, and know them better by hand grasp, by vocal greeting, by meeting face to face.

Papers on sanitary subjects, papers relative to general practice, papers pertaining to the veterinary profession in general will be included in the literary program. Specialists in every phase of veterinary science will find much in the program to interest them.

The Committee on Local Arrangements has appointed from their number a special committee on Clinics, and plans are being prepared for an extensive, instructive and perfectly ordered clinic, demonstrating several new surgical procedures and new surgical appliances.

Members and visitors find that the social features of the meetings are greatly increased by the presence of the ladies and you are urged to consider them in your arrangements for attending this meeting. The Minnesota State Fair and a special program of entertainment will make this meeting a most attractive one for them.

If you intend to prepare a paper for the program of the Minneapolis meeting, and you are respectfully urged to do so, you should notify me at once, stating title of same.

If there be any errors in the address on the enclosing envelope, kindly advise me of the same that our books may be corrected and make more certain the delivery of future communications from this office.

If your neighbor veterinarian is likely to be interested in the work of this Association and would probably apply for membership if solicited, will you not write to the resident Secretary of your state and secure an application blank and copy of By-Laws for your neighbors' consideration?

Your attention is respectfully called to the enclosed statement of your account for dues and you are urged to give this matter early attention. You know upon reflection that prompt payment of dues constitutes an elixir of life to an organization. Your proportion of said elixir is needed to maintain the vitality of the A. V. M. A.

Yours very sincerely,
S. STEWART, *Secretary.*

A package of somewhat similar circulars was sent to the various State Secretaries to issue to qualified members of the profession who would be likely to unite themselves with the Association, or attend the meetings.

A number of Eastern veterinarians and their families will make the trip to Minneapolis by way of the Lakes, embarking at Buffalo for Chicago, from thence by rail. Among those who anticipate this pleasant trip are Dr. and Mrs. George H. Berns, Dr. and Mrs. E. B. Ackerman, and Dr. and Mrs. Roscoe R. Bell,

of Brooklyn, N. Y., and Dr. James L. Robertson, of Manhattan Borough, New York City.

THE NEW JERSEY BOARD OF VETERINARY MEDICAL EXAMINERS

met at the State House, Trenton, on Monday, May 5, and before noon of that day the oath of office was administered by Assistant Secretary of State J. B. R. Smith. Gov. Murphy's selection to comprise this board consists of these names: Dr. Wm. Herbert Lowe, Paterson; Dr. T. E. Smith, Jersey City; Dr. Whitfield Gray, Newton; Dr. T. Earle Budd, Orange; and Dr. Thomas B. Rogers, Woodbury. Immediately after the oath was taken an organization was completed and the following officers elected: President, Dr. Wm. Herbert Lowe; Secretary, Dr. Whitfield Gray, Newton; Treasurer, Dr. T. E. Smith. A committee was named, consisting of the President, Secretary and Dr. Thomas B. Rogers, to arrange the details of the approaching examination.

It was decided to hold the first examination at the State House, Trenton, on June 24, 1902, and intending applicants can secure the desired information and application blanks from the Secretary.

Immediately after the organization and the necessary business completed, the meeting adjourned as a mark of respect to the father of the "McKee act," Senator Wood McKee, of Paterson, whose father's death occurred the day previous.

It is perhaps needless to add this was an eventful day to the veterinary profession of the State, because it really marks the beginning of a new and important period in the history and places the members of the profession on a plane with other branches of medicine. A careful perusal of the "McKee act," which is responsible for the existence of this commission, will show that hereafter in New Jersey intending practitioners must be properly educated and in other ways fitly qualified.

A united feeling exists among the profession in the State, and the harmonious condition, together with recent legislative recognition, is due largely to the untiring efforts of the President, Dr. Wm. Herbert Lowe.

WHITFIELD GRAY, *Secretary.*

"THERE is no use talking; I can't get along without the REVIEW. May it live long and prosper."—*Wm. V. Lusk, Vetin. 2d Cav., U. S. Army.*

NEWS AND ITEMS.

C. J. CARRICK, M. R. C. V. S., of Pittsburgh, Pa., died the latter part of February.

DR. W. T. MONSARRAT, of Honolulu, Hawaii, will attend the Minneapolis meeting of the A. V. M. A.

DR. J. C. BURNESON, Veterinarian to the Ohio Agricultural Experiment Station, Wooster, O., has resigned to again enter into active practice.

"DON'T see why I ever waited so long before subscribing to the REVIEW. Could not now do without it."—(*J. B. L. Terrell, V. S., Dresden, Tenn.*)

DR. JOSEPH R. HODGSON, of Brooklyn, N. Y., is convalescing from a severe attack of scarlet fever, which became complicated with abscess, requiring laparotomy.

DR. L. H. REEFER, of Wheeling, W. Va., was bitten by a rabid dog during the past winter, underwent the Pasteur inoculation treatment, and escaped serious consequences.

DR. J. H. BLATTENBURG, of Lima, Ohio, was confined in the hospital of that city during April for some three weeks, suffering with septic infection of both arms, due to a parturition case in a mare. He is now a convalescent.

THIRTEEN high-class harness horses belonging to W. L. Elkins, of Philadelphia, were sold at auction in New York, April 25, for an average of \$1819. The highest bid was \$6200. Tichenor & Co. sold thirty in the same market for an average of \$1320.

DR. A. G. HOPKINS formerly of the Wisconsin College of Agriculture, has been appointed by the Dominion Government as veterinary quarantine officer for Canada in Great Britain, with headquarters at Glasgow. His certificates will also be accepted by the United States government.

HENRY TWEEDLEY, M. R. C. V. S., of Buffalo, N. Y., was a visitor to Gotham the early part of May. He attended the meeting of the County Veterinary Medical Association, and incidentally promised to reproduce some interesting cases from his notebook for the benefit of REVIEW readers.

"THE COW-PEA" is the title of the latest publication issued by the Experiment Farm of the North Carolina State Horticultural Society at Southern Pines, N. C. This book, neatly bound and illustrated in plain and concise manner, discusses the value and uses of this important crop, the cow-pea. Every reader can

get a copy free by writing to the Superintendent of Experiment Farm, Southern Pines, N. C.

DR. WILLIAM DOUGHERTY, of Baltimore, Md., sailed for Europe from New York, May 12, and a number of his friends were at the dock to wish him *bon voyage*. He expects to be absent for several months, and one of the most pleasant of his anticipations is a call on his old teacher and great friend, Prof. Liautard, in Paris. America has no more loyal veterinarian than Dr. Dougherty, and we trust that his transatlantic sojourn may be fraught with pleasure and healthful recreation.

ROMANCE OF A VETERINARIAN.—After Dr. A. J. Savage, of Colorado Springs, Col., returned to New Orleans from his third South African trip on March 7, he visited St. Louis, Mo., and Gillespie, Ill., and after a few weeks reached Kansas City, Mo. In the last-named city he met an old friend, Miss Sarah E. Callahan, a native of Columbus, Ohio, who was visiting her cousin in the Missouri metropolis. She was on the point of returning East, but the presence of the genial veterinarian somewhat changed her plans, with the result that they were married on April 1st, starting for the West the day following, and on the 5th they were ensconced in their new home near the base of Pike's Peak.

THE old-established and well-known veterinary instrument house of John Reynders & Co., for years at 303 Fourth Avenue, New York City, has ceased to exist. On May 12 the stock was sold by the assignee for the benefit of the creditors, and many of the veterinarians of Gotham secured some rare bargains. Drs. Coates and Gill were heavy investors, and they have probably enough of certain kinds of instruments to perform all the operations that will be undertaken in the country during the period of their natural lives. Dr. Gill secured enough catgut ligatures, for instance, to sew up a wound as large as the Atlantic Ocean, while Dr. Coates could pack the cavity of that wound with the antiseptic gauze which fell to his bid. Theodore F. Krey, who has had charge of the veterinary department of the Reynders' business for the past ten or a dozen years, will continue that branch, and for the present has secured office room at the New York-American Veterinary College, 141 West 54th Street, where communications may be sent to him. Mr. Krey is in every way familiar with the details of the veterinary instrument business; has an Eastern acquaintance with veterinarians probably more extensive than any other commercial man; the field is almost unoccupied, so far as New York is concerned, and he should do a good business.

DEATH OF "FARMER" MILES.—The most celebrated ridgeling castrator in the world, T. C. Miles (known internationally as "Farmer" Miles), died at Charleston, Ill., in March, aged seventy-five years, having been born in Kentucky in 1825. For almost half a century he has followed the business of a professional castrator, preferably doing the operation upon cryptorchids, and has instructed many students and veterinarians his methods of procedure, both upon animals and birds. It has been said that the peculiar length and shape of his fingers was a potent factor in his success. He was also the inventor of many instruments designed for emasculation, the ecrazeur bearing his name having been a standard instrument for many years, while his caponizing outfit is probably the best on the market. He gave to the veterinary profession two sons—one a graduate of McGill, the other of the Chicago college.

HOW THE HAIR TURNS WHITE.—According to certain observations of Metchnikoff's (*Proceedings of the Royal Society*, No. 453), it appears that the performances of phagocytes are not always advantageous, at least from the cosmetic point of view. In a study of the general subject of atrophy, especially senile atrophy, Metchnikoff has found that the atrophic process that so affects the pigment of the hair as to turn it white is due to the intervention of phagocytes. These cells have each a single nucleus, he says, but they differ greatly one from another in general appearance owing to numerous amœboid prolongations of their protoplasm. They are situated primarily in the medullary portion of the hair shaft, but make their way outward into its cortical layer, where they absorb the pigment granules and remove them from the hair.

In hair which has partly turned white, but still preserves its pigment to some extent, a great number of these phagocytes may be found, while in absolutely white hair phagocytes filled with pigment grow scarcer and scarcer and most frequently disappear completely. On observing the root of a hair that is beginning to whiten, a great many phagocytes filled with pigment are often found. It is indubitable, says Metchnikoff, that the phagocytes of the hairs swallow up the granular pigment of the cortical layer and carry it away, thus leading to complete whitening of the hair. In this way, he maintains, the occasional phenomenon of the hair turning white in a single night is to be explained, the phagocytes being endowed with greatly heightened activity. The whitening of the hair of old dogs, he says, is brought about by the same process.—(*New York Medical Journal.*)

PUBLISHERS' DEPARTMENT.

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Alex. Eger, 34 East Van Buren St., Chicago, Ill., Veterinary Publisher and dealer in Veterinary Instruments, Books, and Drugs, is the authorized agent for the REVIEW in Chicago and the Middle West, and will receive subscriptions and advertisements at publishers' rates.

"SANITAS" at the top of page 16 (ad. dept.) is considered a staple by the leading veterinarians of this country and Europe. For the convenience of busy practitioners, the manufacturers of this product have made several special veterinary preparations aside from the "Crude Liquid" furnished for general use as an antiseptic and disinfectant; among others, an ointment, a soft soap, a cake soap, and an embrocation; all of which have found favor with veterinary practitioners.

HAUSSMANN & DUNN Co., of Chicago, whose ad. appears on page 1 (ad. dept.), have added to their large list of veterinary instruments and appointments, the "Combination" Veterinary Dental and Surgical Halter, recently patented by Dr. Ellis (New York), they having the agency for the entire United States and its Territories, outside of New York City and Brooklyn.

YOUNG PRACTITIONERS not firmly settled, and new graduates not yet located, may find something to interest them in the advertisements under the head of "Practice for Sale," at the foot of this page.

MRS. BARRON has not disposed of all of the books of her late husband's library, and we have left the list entire, as it was last month, on page 14 (ad. dept.), not having been advised by her which of the lists she has sold. If you want any of them, write Mrs. Barron at once, and you will be able to buy them very much below their cost.

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For sale by Veterinarian. A good paying practice, dwelling, barns and adjacent renting property. In one of the best towns in Mo. The Co. seat, 7000 inhabitants. Good farming territory. Will sell entire at bargain and with terms. Must go West on account of health. Address "BARGAIN," care of the AMERICAN VETERINARY REVIEW, 509 W. 152d St., New York City.

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REVIEWS WANTED.

The Publishers will pay 25c a piece for April, 1901, and September, 1898. Also any one having any of the following numbers will kindly communicate with us before sending, as only a limited number are wanted of each. April, June, July and December, 1899, and January, 1900, also March, 1896. Address, Robert W. Ellis, D. V. S., No. 509 W. 152d Street, New York.

Journal

AMERICAN VETERINARY REVIEW.

JULY, 1902.

All communications for publication or in reference thereto should be addressed to Prof. Roscoe R. Bell, Seventh Ave. & Union St., Borough of Brooklyn, New York City.

EDITORIAL.

EUROPEAN CHRONICLES.

MOLASSES AS FOOD.—In the February issue of the REVIEW of this year, No. 11 of our last volume, there appeared a letter from Dr. Griffin, veterinarian to the 5th U. S. Cavalry, relating a series of experiments he had made, concerning the advantages that could be derived, in campaigns under special climates, by the use of molasses added to the daily ration, replacing a proportional quantity of other food.

Probably the excellent communication of our friend passed unappreciated, and I plead guilty to having failed in giving it justice.

Recently, however, we find that it had been given the hospitality of the pages of one of the English journals, and *de novo* our attention was directed to it.

A short time before, in a visit that I made to the French horse-show (*Concours hippique*) in Paris, while passing through the various exhibitions which were made in connection with the show, I noticed a little side exhibition where molasses bread, molasses biscuits, were sold. These are recommended as a supplement to horse food.

And finally, lately, the subject became the object of a long and most interesting discussion at the Société Centrale, in which very important facts were presented by the learned director of the cavalry of the Compagnie Générale des Omnibus,

my friend Mr. Lavalard, and after which I had the honor of relating the experiments of our friend Griffin, by extracts that I made from his letter alluded to already.

To complete this series of events, it was my pleasure to accompany a gentleman of Boston through some of the horse establishments here, where we had the opportunity to see molasses feeding carried out on a large scale. My American friend, who is well posted on horse matters, and keeps a large number of them, acknowledged to me that this was altogether new to him, and that he had never heard of it in the States.

All the above facts are my reasons for the present article, and for the following facts that I find in Lavalard's article.

It seems that it is true, thanks to the researches of MM. Chauveau and Grandeaum, that sugar substances have found their way into the alimentation of domestic animals. But, although from French origin, it is only in Germany that they found their practical application. Many compounds have been made, some of which proved more satisfactory than others: oil-cakes, corn cakes, remains of wheat, bran, cut straw, peat, blood, bread, etc., mixed with molasses, have been tried by many experimenters. Molassed peat seems to be the one that has given the best results, and a special preparation of that kind, under the name of "Molassine," is to-day used in the German, Austrian and Russian armies.

Similar trials have thus been made with it in Paris, in two large establishments, and from the general total of observations made, the following conclusions have been adopted :

(1) That there is no danger nor inconvenience whatsoever to give in the daily ration of a horse at least one kilog. of molassed peat, of good quality, in the proportion of 20 per cent. of peat and 80 of molasses.

(2) That to the extent of one kilog., at least, molassed peat takes absolutely the place of the same quantity of good oats.

(3) That by this change of diet the general condition, muscular power, energy to work, health, not only remains perfect, but the coat looks better and more shiny.

(4) That with horses subject to colic and indigestion the attacks are less severe, less frequent and sometimes disappear.

At the Campagnie des Omnibus, where 15,000 horses are kept, they are all following that *régime*. The typical ration for horses weighing between 500 and 600 kilog. is as follows :

Crushed oats, corn and beans mixed 7 kil. 500.

Molassed peat - - - - 2 kil.

Cut straw - - - - between 3 and 4 kil.

No hay whatever.

The old ration, which would have cost in ordinary times between 2 francs 50c. to 3 francs, is reduced to 1 franc 79c. (from 50 to 60 cents to a fraction over 35 cents.)

We have seen the horses of one depot of 1500 horses all fed with this ration, and whose work covers a distance of 16 to 18 miles a day, return from their trip in splendid condition and as full of energy as could be desired.

Let us read over Griffin's article and we will find that all he has so well observed are matters of facts, and that he deserves credit for calling attention to a subject which, we believe, is still little thought of, if not unknown in the States.

* * *

DISTEMPER VACCINE.—Some months ago I spoke of a series of experiments, which were to be carried out by a commission appointed by the Société de Médecine Vétérinaire Practique to test the value of the Phisalix distemper vaccine. I will today tell our friends of the results obtained, as they were presented by the secretary of the commission.

Three questions were to be answered :

(1) Give the disease to young dogs free from previous infection, by inoculating them with culture of the virus made by Dr. Phisalix ;

(2) Show that dogs which had had the disease were immunized against an injection of the virus ;

(3) Vaccinate pups, two or three months old, which had not had the disease, with 2 or 3 inoculations made with attenuated

cultures of increasing virulence, eight or ten days after the first inoculation. Half of those pups were to be tested afterwards with virulent culture, the other half to be exposed with the first also, in being put in contact with diseased dogs.

The first part of the experiment was carried out without difficulty. Four dogs were inoculated; all died with symptoms of the disease, more or less acute. Two other witnesses, which had not been inoculated, but had lodged with the others, took also the classic form of the disease and died in 21 and 35 days.

This experiment proved that the inoculated microbe was the agent of distemper; that it reproduces the acute and chronic forms of the disease, and that dogs, rendered diseased by the inoculation, infect healthy subjects living with them.

The second part of the experiment was not as favorable to the consideration of Dr. Phisalix. Its object was to show that the inoculation of the attenuated microbe confers immunity. That was the question which interested the commission in its practical application.

To carry it out, seven dogs between two and three months of age, were inoculated with 3 cc. of very weak culture. Unfortunately, after the operation, they were kept for four days in contact with two other sick dogs, and in the same kennel. Of these seven dogs, four took the disease with the characteristic symptoms, after an incubative stage of no more than 22 days. Out of these seven dogs, only two survived. One was slightly sick, the other, the only one which resisted the second inoculation of more virulent culture, presented, however, the symptoms of the disease. With all, a painful oedematous swelling occurred at the seat of inoculation. Two had pustular eruptions on the abdomen and in the groins.

Considering that those dogs had been kept exposed four days after the first inoculation, plans were laid out by which this second unsuccessful trial should be made over again under strict conditions, viz., young age of the pups, virgins from disease and kennels perfectly free from germs. Unfortunately for some reason or another Dr. Phisalix declined to submit his vac-

cine to another test, and the commission considered its work at an end.

It is very unfortunate that such failure should have crowned the efforts of the commission. The inventor of the method claims to have a large number of professional statements (some 1200, I hear) testifying to results entirely contrary to those presented by the commission. Why should he retire a proposition that he was first to make? Mystery!

But in the meanwhile, and to guard our friends from too hasty desire to advocate the method, let me give them briefly what Dr. A. J. Sewell, F. R. C. V. S., tells of the vaccine in the *Veterinary Record*:

"I have had an opportunity of trying Dr. Phisalix's serum for vaccinating dogs against distemper, but the results in my hands have been extremely unsatisfactory. . . . The vaccinations were carried out under antiseptic precautions. All the dogs without exception contracted the disease, when they came in contact with an infected dog. . . . I have just seen an unsolicited letter from a gentleman. He had fourteen dogs inoculated, and these afterwards became infected, when brought in contact with the disease. . . . The conclusion I have come to is that vaccinating with Dr. Phisalix's serum has no effect one way or another."

Until proofs to the contrary, I entirely agree with Dr. Sewell.

ANOTHER SEVEN-DAY WONDER.—While the results that I have just been relating on this distemper vaccine may, for the present at least, be classified under the list of scientific disappointments, a consolation remains to Dr. Phisalix, viz., that he is not the only one who has met with such dissatisfaction.

I recently mentioned in one of my "chronicles" the sensation which has been created in Italy in relation to a new treatment for foot-and-mouth disease, which by the name of its preconiser has been baptized the "Bacelli method." In my first article I told how it was received, patronized or objected to, and

how the Italian press was filled with articles relating to the new treatment, now from its advocates and again from its adversaries.

It seems that after all the advice given by some of those, viz., "To hurry up and cure while the remedy does it," was not altogether exaggerated. The information that is coming from almost every part of the world seems to be unanimously against it, and although good reports are still now and then read of in Italian veterinary journals, yet in them also, as well as in those of Spain, Germany and Switzerland, we read of a general condemnation of the method.

According to Prof. Hirzel, of Zurich, the small-dose treatment, by subcutaneous or intravenous injections, has had for results, in animals affected with an "extraordinary mild" attack, to produce only mercurial accidents. In the canton of Zurich and of Fribourg, trials made on quite a large number of animals, not the slightest curative effects were noticed, but, on the contrary, mercurialism of more or less severity; and in Italy the list of failures continues to increase.

This is not all. According to recent information, it seems that the method does not make victims only among bovines, but also among those who recommend and apply it. A veterinarian is sued for damages by an owner, whose stock has been treated by the method with sad results. Others have suffered as severely by the loss of customers, who preferred to resort to the services of a "less fashionable veterinarian."

Minister Dr. Bacelli does not like the look of things—for him, if the results are so disastrous, it is because the veterinarians are ignorant. Physicians must take their places. And Bacelli (the physician) is revenged by Bacelli (the Secretary of Agriculture), who proposes to give the diploma of veterinarian to physicians who shall follow a course of veterinary lectures for six months. It is also reported that Prof. Boschetti, of Parin, who was the first to call attention to the dangers of the famous treatment, has been the subject of a private revenge from Bacelli (the Secretary). Promoted to a higher professor-

ship, his nomination was refused, and not confirmed by the Secretary of Public Instruction, through the intrigues and influence of his colleague, the Secretary of Agriculture, Dr. Bacelli.

"Le ire Baccielane" (the hates of Bacelli) were satisfied, and still his "*mirobolanti invenzione*" (wonderful invention) remains another scientific disappointment.

Of those I shall probably have no occasion to speak any more.

A. L.

THE LEGITIMATE FIELD OF THE A. V. M. A.

This very important subject is being agitated by our friend, the editor of the *Journal of Comparative Medicine*, and the REVIEW is convinced that he is treading upon very dangerous ground. It does not believe that he is, figuratively speaking, climbing a veterinary Mt. Peleé, and that an eruption, belching forth rivers of lava and tornadoes of crater dust, is at all imminent. But we fear he is advocating a doctrine which means retrogression for the national veterinary organization—an association which in the past ten years has risen from a position of comparative insignificance to a condition which should be the pride of every veterinarian in the land. Brother Hoskins has done as much as any one member of that organization to bring it to the commanding place which it holds, and for that reason his attitude must command the respectful attention of those who are to shape her precious destiny. We have recently seen the learned German savant Koch, supported by a world-wide reputation as an authority upon the subject of tuberculosis, make what most of his fellow investigators believe a fatal mistake of judgment and conclusion, and it is not at all impossible that our journalistic *confrérée*, honest as he undoubtedly is in his convictions, has followed in the footsteps of the Berlin professor.

It is the boast of the profession that at our annual gatherings there will be found intellectual food for every member, no matter in what field of veterinary science he may labor. The comprehensive circular just sent out by the Association's ideal Secretary laid particular stress upon this very point, and it is, we

believe, conceded by the best minds within the Association that the variety of the veterinary field, great as it is, cannot be so diversified but that all of her children can brood under the broad wings of the parent association. We sincerely trust that the day will never come when any member of the veterinary profession can truthfully say that he has failed to attend a meeting because the programme contained little of direct interest or benefit to him. The *Journal* says substantially that surgical clinics and practical papers should be omitted from the meetings of the national organization, their proper place being at State and local gatherings, and, further, that if the private practitioner is unwilling to journey across the Continent to listen to and take part in the discussions of higher subjects alone, the Association can well afford to dispense with him. This is, probably, the boldest stand which has ever been taken by a member of that organization, and it is for the purpose of placing the subject squarely before the membership, in case such a proposition is brought before them at the approaching meeting, that this article has been written.

It is undoubtedly true that all true veterinarians take an interest, and most of them a deep one, in all the great questions which mean progress along the line well termed "State Medicine," but the concern of the man engaged in private practice is not of the same nature and depth of him who is working in that particular field. He is glad to read and absorb all that is written by those who make such subjects their life-work, and he rejoices sincerely as one after another of the great problems reach their solution; he points with pride to the work thus accomplished by his brother veterinarian, and claims all the credit of such discoveries for *his* profession. Who, for example, does not narrate with righteous egotism the wonderful work accomplished by the veterinarians of America through the Bureau of Animal Industry in stamping out forever from this country contagious pleuro-pneumonia, even though he may not personally have ever seen a case of that disease? What veterinarian does not rejoice at the original investigations of Smith and Kil-

borne, who gave to the world that fascinating "romance of pathology"—the discovery of the microorganism of Texas fever? Does he not claim for the American veterinary profession the best federal meat inspection service in the world? And, yet, what has the private practitioner contributed to the elucidation of these mighty problems, beyond his moral support, and his counsel and assistance to those engaged actively in the work? While all this is true, and much more, how many would be willing to drop the routine of their private professional duties and journey a thousand miles or more to a convention where such questions *alone* were discussed? The very large majority of the membership of the A. V. M. A. is, always has been, and always will be composed of men who treat sick and disabled animals; a very large minority is made up of those engaged in teaching veterinary science in State universities, those pursuing experiment station work, veterinarians connected in various capacities with the Bureau of Animal Industry, those of the Army, and those occupying other positions where contagious and sporadic diseases are investigated with a view to their control and prevention. While the majority is much interested in the work of the minority, and *vice versa*, the special field of the one class cannot be totally eliminated from the programme of the meetings of an association to which both belong without destroying the interest and support of the one which has received the slight. The *Journal's* scheme means practically a total loss of the majority. It would, in other words, transform the A. V. M. A. into an experiment station association, with possibly a somewhat less restricted field than that which is occupied by the existing society of that name.

Is that the picture which the editor of the *Journal* would like to see? We know that it is not. We fear that he has not given his usual mature thought to the consequences of such a radical innovation. If the majority of the members wish surgical clinics it is because they believe themselves benefited and enriched by them. They can study the results of the investigations and the discussions upon topics of State medicine in

the quiet of their homes with as much intelligence as though they were present and listened to them ; but no amount of descriptive writing can transmit the same knowledge of a surgical procedure that ocular demonstration imparts ; one must be upon the scene and behold with his very eyes the methods adopted by men of national reputations, or with special ability, who should, we think, bring to the attention of their less favored brethren classical and new operations, or new or better ways of performing such operations as are of most importance to the practitioner.

As to the omission of papers upon practical subjects, it does seem to us as a sacrilege to suggest such a hazardous experiment, and the day it is promulgated will mark a crisis in the onward march of the national association.

The agitation of this subject can be of little benefit to the A. V. M. A., and the sooner its present policy is emphasized the better for it. We, therefore, hope that the *Journal's* suggestion will be placed in the form of a resolution, so that it can be submitted to a vote, and we will venture the prediction that it will be so forcibly rejected as to effectually settle the question during the present generation.

As to the practicability of section work, which the *Journal* contends has proven a failure, we beg to again differ from our contemporary, and to reiterate that the Association is drifting into it gradually, unconsciously, irresistibly, and practically.

ANOMALOUS VETERINARY LITERATURE.

We have received the first number of a magazine called *The Provincial Veterinary Quarterly*, published at Manchester, England, edited by John Howard, M. R. C. V. S., L. H. A. S. S., etc., and "devoted to the interests of provincial veterinary surgeons and scientists." As a curiosity, it is quite interesting and readable ; but as a professional journal, laboring for the advancement of veterinary science, it is disgusting in the extreme. The name of Howard pervades every page, he being the author of the editorials, and the contributor of almost if not every

original article in the twenty-eight large pages which the periodical contains. When he tires of writing the name "John Howard," he varies the monotony by Romanizing himself into "Howardus Johanneim," and curtailing it to "H. J., V. S., M. R. C. V. S." while the only contributions which are not directly credited to him bear *noms de plume* which probably conceal the identity of "John Howard" (such as "Artemus Tertius," "Senius Veterinus," "Agricola," and "V. S. Rusticus.") If the contents were valuable, it has the merit of being absolutely original, but its tone is blackguardish throughout. He denounces the entire composition of the Council of the Royal Veterinary College, and even the veterinary societies become the objects of his blasphemous pen. After a somewhat careful scrutiny of the *Quarterly*, in search of some sane ideas of its energetic editor, we have concluded that John Howard, M. R. C. V. S., L. H. A. S. S., is well described by the last three letters of his second title.

AT the recent annual meeting of the Louisiana Medical Society at Shreveport, Dr. Wm. H. Dalrymple, of Baton Rouge, Vice-President of the American Veterinary Medical Association, was one of the two men elected to honorary membership. The recipient of this mark of medical distinction is in every sense worthy of the honor conferred upon him by the representative organization of the medical profession of his State. The South has had little opportunity to know the true worth of the science of veterinary and comparative medicine, as few of the leading members of the profession have taken up their abode in that section of the country, and the marked distinction which has come to Dr. Dalrymple from various sources shows that individual worth is appreciated and respected wherever found.

"THE REVIEW appears regularly and punctually, and its contents are of such a nature that no up-to-date veterinarian can afford to be without it."—(Charles F. Dawson, M. D., D. V. S., Lake City, Fla.)

ORIGINAL ARTICLES.

THE LIVING AND THE DEAD:

REMINISCENCES OF THE VETERINARY PRACTITIONERS OF FORTY
YEARS AGO.

BY ONE OF THEM.

(Continued from page 213).

R. JENNINGS, V. S.

Little does the author know personally of him. After meeting him at the organization of the United States Veterinary Medical Association at the Astor House, and where he acted as one of the primary functionaries, he was somewhat lost sight of by the profession outside of Philadelphia, where in 1866 with a number of veterinarians from Pennsylvania, they obtained a charter to organize the Pennsylvania College of Veterinary Surgeons, where he occupied the chair of pathology and surgery. Although a self-made man, Jennings was a hard student, and was much interested in the work of the college, which, notwithstanding his efforts and the assistance of his colleagues of the faculty, lasted but a short time. R. Jennings wrote several books for general practical use and principally for farmers; they never were recognized as of any value in a classical point of view. Towards the last years of his life, R. Jennings left Philadelphia and went West to practice.

* * *

A. LARGE, M. D., M. R. C. V. S. L.

Quite young when at the formation of the U. S. V. M. A. he joined those present and signed the constitution at the Astor House, where he arrived with his uncle Curtis. Large, who had a short time before returned to the States—somewhere in 1860—was a graduate of the Royal Veterinary College of London. After his arrival in Brooklyn, he entered the Long Island Medical College, and graduated as an M. D.

He then took charge of his uncle's old practice, but did not like the riding school part of it, although he was himself much in favor of that sport. He was appointed to the New York College of Veterinary Surgeons as professor of theory and practice when Copeman resigned the position, and for several years, up to the closing of the school in 1875, he held the position, and kept it for a few years more at the American Veterinary College.

Dr. Large was a fluent speaker, a thorough physician, master veterinarian, and superior teacher. Rather small in stature, stern features, which would brighten up with force and expression when he delivered his lectures, snapping his contracted lips against each other when engaged in serious discussion, he was as a teacher liked by all of his students. When he was at the Astor House and when he held his professorship, Large idolized the veterinary profession. He was very fond of medical studies, and the many sacrifices and concessions that he made to veterinary practice were known only by his most intimate friends. But in later years, for some unknown reason, after the death of a very dear relative who had cared for him for years when he was younger, he took a great dislike, if not to the profession itself, at least to the connections it imposed on him, and he left Brooklyn for Massachusetts, where in a charming spot of the Berkshire mountains, at Great Barrington, he retired and established himself into consulting human practice.

Dr. Large was one of the first to make out the correct diagnosis of cerebro-spinal meningitis, of which he observed one of the first outbreaks. He wrote several articles on the subject for the *Veterinarian*, of England, and collaborated an appendix to a work of Stonehenge on a few special diseases of America.

On the subject of cerebro-spinal meningitis he had peculiar ideas, and the specimen which he exhibited for many years to his students and friends shows how he was imbued of his peculiarities on the nature of the lesions. The specimen was a portion of the spinal cord, where the meninges were rather in-

jected, and where a small deposit of fat had been left. This by preservation in alcohol had assumed a peculiar aspect and was considered and exhibited as a deposit of plastic lymph.

The laughing side of this is, however, that many, if not all, of those who saw the specimen accepted for a long time the explanation until deeper and more thorough studies of the nature of the disease and of its lesions were better known. Nevertheless, it must be remembered that Large made this error over forty years ago, and that the simple fact of the positive diagnosis of the disease, epizoötic in its character, is more than sufficient to excuse or to pay for the mistake he made in the nature of the lesions.

Large is still alive, the veterinary profession does not interest him any more, but the veterinarians of forty years ago remember him and wish him health and happiness.

* * *
A. LIAUTARD, M. D., V. M.

Of Dr. Liautard there is little to say, or, rather, too much might be written; but he is of our day, and he has been too prominent not to be known of all who live to-day.

That he was one of the first to join the U. S. V. M. A.—in fact, was the first Secretary; that he has acted an important part in the doings of that professional body, and that from the beginning to the last, his work in behalf of the profession has always had for its object the elevation of veterinary medicine—all that is known. He has written much for the association; perhaps too much, as one of his friends used to say. And yet, of all his writings, none created more sensation than the address he sent at the time of the creation of the Society of the Faculties of the Veterinary Schools. Was he wrong? Was he right? But time has proved anyhow that had his advice been taken, errors might have been avoided, and certainly the influence of that organization would have been felt, its work more positive, and the good it might have done placed to its credit.

Of Liautard's life during his stay at the veterinary colleges

with which he has been connected, there are many little stories told which are more or less amusing.

Here are a few :

In 1864 he was engaged to be married, but he was also taken up with a serious work : the improvement of the opportunities for students of the New York College of Veterinary Surgeons. A camel had died at Barnum's large managerie, and the cadaver sent to the Lexington avenue institution. L. had decided to mount the skeleton and to prepare as many of the specimens as he could get for his lectures and for the museum he was bound to collect. To this effect, one day he was in the hospital, engaged in cleaning and washing the entire digestive tract of that camel. For the intestines the work was simple, but for the stomach, with its enormous compartments, he had a hard job. With pants in his boots, coat off, shirt sleeves raised, sweating, covered with stomachal contents from head to foot, he was breaking, shoveling and pushing them away, while his old negro Jack was pouring water as fast as he could to try to soften and wash them away, when a knock at the door of the place where the work was going on was heard. "Come in," said L. The door opened and his intended lady showed herself in the company of a friend. She was passing by and had come to say a few words. The situation was rather peculiar. L. excused himself ; the lady retired ; but for a long time (oh, dear, how long !) he was told that he had a peculiar odor about his clothes and his hands. After this, he was careful not to be seen in his specimen-preparing costume.

There was visiting him often an old retired Englishman, Mr. Epps, queer in his dressing, inquisitive, and many times annoying ; he was sometimes in the way when L. was engaged in his professional work. One day, at one of the clinics which he had established for his students, there came a horse with an enormous abscess of the withers. Filled to the utmost, it was evident that the pus would come out with great force as soon as the abscess would be punctured. The Englishman was there ; he wanted to see the opening made, and pushed himself rather

conspicuously in front of the students, who were also anxious to see the result. L. thought he might give a lesson to the Englishman by having some of the pus go over the visitor's clothes. He took a bistouri and started to make his incision to that effect. But as he plunged it into the top of the withers, the horse made a movement, the incision deviated, and a thick stream of pus came rushing out through the opening and fell all over his own face and covered all his clothes. Afterwards, for himself as well as for others, L. was more careful in emptying soft tumors.

L. was very fatherly with his students, stern, and yet intimate, without allowing familiarity. Severe and friendly, strict to all and demanding of each the exact performance of his duties, he was very much liked and yet feared more or less by all. He was always ready to give advice, an explanation, or anything that a student might need, and more than one has been glad to call on him when the family remittance was late in arriving. While engaged in many occupations, and his time much taken up with practice or other duties, he was a slave to his obligations towards his class, and whether in day time or in the evenings, when due he was there. Dissections at the A. V. C. were carried on in the evenings, and several times a week L. would be at the dissecting room either to demonstrate, guide the students in their work, and on many occasions merely for the pleasure to be with them. One evening it was snowing very hard, the wind blew and it was scarcely weather for any one to be out after supper and a good day of work. Several of the students had been obliged to come back to the College for a quiz, and when this was over, they came down with a rush—some to go away, others to prepare for dissecting. One of them, one of the best of that class, who never neglected his work, was not well disposed that evening, and instead of getting his dissecting gown, called to one of his chums and said: "Oh, come, let us go home; it is horrid weather out and the old man won't come to-night." As he turned back he found himself face to face with L., who said, "No, the old man will not come, he is here."

The poor fellow did not know what to say nor to do, and, ashamed of himself, scooted away, followed by the laughing of all the boys. But he knew the "old man," and he knew that a "qeeze" from him would be all the reproach he would give him. He got the "qeeze" and was not hurt by it, for he was as good a student as a good fellow—qualities which no doubt he has still.

* * *

ROBERT MCCLURE, V. S.

Another self-made man, who was practicing in Philadelphia somewhere in 1860. He became prominent on two occasions: First, in some difficulties which originated shortly after the organization of the U. S. V. M. A., which ended in his expulsion from that body. According to some statements printed, "a general quarrel seems to have taken place and the records of the first meeting were destroyed—the stubs of the first pages which have been cut out are still in the book used by the Association."* The second and more serious event is the condemnation which he received for selling bogus diplomas to veterinary surgeons. He was fined \$2000 and sentenced to nine months imprisonment. It was stated that, after sentence was pronounced, he attempted to poison himself, but was administered a counter-poison and was saved. He was the author of a popular work on diseases of horses. After his condemnation he was lost sight of.

* Dr. R. S. Huidekoper, Sept., 1899.

(To be continued.)

"JUNE REVIEW received and read with interest. I find it full to overflowing of the kind of matter which veterinarians like to read."—(S. Stewart, M. D., V. S., Kansas City, Mo.)

THE old conundrum, how much would it cost to shoe a horse providing the first nail would be charged for at one cent and a doubling up in cost of all the others, was carried out. Assuming that there are seven nails in each shoe, thus making it 28 nails, the total cost for shoeing the horse would be \$1,300,202.24.

HÆMATOZOA AND THEIR MODES OF TRANSMISSION.

BY. PROF. G. NAROTEL.*

If there is in parasitology a question that has made extensive progress in the last years, it is certainly that of the hæmatozoa.

It is not long since that word brought to the mind of most physicians only the idea of paludism ; indeed, the hæmatozoon of Laveran has for a long time remained the only one known by the medical public, and besides the number of those parasites of the blood was relatively limited.

To-day, things have much changed : the number of those which have been observed with certainty in man and domestic animals has raised to no less than eighteen, and a glance at the following list of the names of each parasite and the disease it produces will satisfy any one of the progress accomplished :

A. PROTOZOA.

(1) Sporozoa.

- Plasmodium malariae*
- Plasmodium vivax*
- Laverania præcox*
- Hæmoproteus Danilewsky*
- Piroplasma bigeminum*

{ Human malaria, paludism, intermittent fever, paludean fever, etc.

Malaria of birds.

Bovine Piroplasmosis (Texas fever, Tristeza, mal de brou, etc.)

Canine piroplasmosis (uterus, etc.)

Ovine piroplasmosis.

Equine piroplasmosis.

(2) Infusoria.

- Trypanosoma Evansi*
- Trypanosoma Brucii*
- Trypanosoma equiperdum*

Indian trypanosome (swine).

Nagana (disease of the fly, disease of the Tsetsé).

Dourine.

B. WORMS.

(1) Trematodes.

- Schistosomum hæmatobium*
- Schistosomum bovis*

Human schistosomose (bilharziosis of Egypt.

Bovine schistosomose.

(2) Nematodes.

- Strongylus vasorum*
- Sclerostomum vulgare*

Pulmonary strongylose of dogs.

Sclerostomose of horses (vermicular aneurism).

* Translated by A. Liautard from the *Journal de Zootechnie*.

<i>Filaria Bancrofti</i>	Human filariose.
<i>Filaria immitis</i>	Canine filariose.
<i>Filaria recondita</i>	Canine filariose (hæmatozoa of Lewis.)*

Recent researches have therefore considerably increased the numerical importance of hæmatozoa ; they have done more, as they have also remarkably increased their pathogenic importance. Some have revolutionized the history of some of the most dangerous of our parasitic diseases, among which we must name paludism, piroplasmoses, trypanosomoses and filarioses.

Let us resume those researches briefly :

(1) PALUDISM.—It was in 1880 that Laveran discovered the hæmatozoon, which carries his name, and that he described its principal forms ; as a body spherical, flagellated, in crescent and in rosaceous shape. At first, the discovery passed overlooked until towards 1882, when the parasite was discovered in various parts, especially in Italy, Corsica, England, Germany and Austria. Its existence became more and more accepted, and in 1885 Marchiafava and Celli proposed the name *Plasmodium maliariae*.

Since that time observations have been made in numbers, showing in an unquestionable manner its constant presence in all individuals affected with paludism and its absolute absence in those who are free from it.

Furthermore, under the impulse given by Golgi, the doctrine of the "plurality of species" was born, generally admitted in our day, in such manner that it is classical actually to describe not one, but three fever parasites :

- (1) *Plasmodium maliariae* of the quartan fever ;
- (2) *Plasmodium vivax* of the tertian fever ;
- (3) *Laverania præcox* of irregular or autumnal fevers.

Since a long time it was asked what could be the mechanism of the infection. Some thought the morbid gerin was carried by the air, hence the origin of the word "mal'aria" (bad

* To this list, other less important parasites may be added : Trypanosomes of the camel, of the dog, rabbit, guinea-pig ; *Fasciola hepatica* ; *Filaria equina* ; *Filaria magalhaesi* ; Fil. Evansi and many more embryos of helminths which pass through the blood to reach the organs.

air); others rather advocated the hydral or the elluricalt origin.

A fact, however, had been noticed: the abundance of mosquitoes in malarial countries, and again it was Laveran, who, one of the first, advanced the hypothesis of a possible part played by those insects. Thus the theory of the mosquito received birth. It has just been verified; but, curiously enough, with the hæmatozoæ of birds, in 1898, by Ross and only a few months later by Grassi, with those of malaria.

With the assistance of Bignami and of Bastianelli, Grassi has shown that only the mosquitoes belonging to the family of Culicids and to the Anophiles genus, can serve as intermediate hosts to the germs of malarial endemias. (1)

The proofs in favor of this are numerous to-day:

(1) Malaria has been inoculated with success to individuals living outside the centers of contagion, by being stung by anophiles, intentionally infected. (Experiments made by Patrick Manson upon his own son.)

(2) Day by day, it has been possible to follow the growth of the hæmatozoa in the body of the Anophiles, which had been made to suck palustral blood. (Observations of Grassi, Bignami and Bastianelli.) It is not necessary here to recall these researches purely zoological; let us only say that once in the body of the insect, the parasites give birth to *zygotes* (eggs of botanists) which become encysted in the walls of the stomach and produce an innumerable quantity of small vermicules called *sporozoites*. These are thrown into the lacunar circulation and principally gather in the salivary glands, then in the trunk of the mosquito, which inoculate them with every one of its pricks.

(3) Paludism has been avoided in taking only the single precaution to protect one's self from anophiles. This is shown by the experiments of Sambon and Low, who without the slightest accident were able to pass a whole summer in one of the most unhealthy parts of Roman country with the doors and windows of their house simply closed with metallic screens sufficiently fine to prevent the entrance of the cullicids.

Finally, to remove all doubts, Sambon and Grassi in 1900 undertook a series of experiments, which demonstrated in an absolute manner the part of anophiles in spreading fevers. Those were made on the disciplined corps of men working in the companies of railroads, in a region where the disease is so endemic that it is called "la piana di pesto," the pestiferous prairie, and consisted exclusively in protecting from the mosquitoes all individuals living in a given district, while those of the neighborhood localities remaining unprotected served as witnesses.

The protection was obtained in closing all the openings of houses with metallic screens, in carrying from sunset to the morning a hat with a veil covering the face and neck, and in having thick gloves protecting the wrists.

The results were wonderful; out of 113 individuals of the protected zone, not a new case occurred, while in the other the proportion of those who became affected was 49 out of 50. The proof was more than wonderful, and to-day it can be said without fear of errors that two conditions are indispensable for the development of paludism:

(a) That in the country individuals affected with palustral fever be with mosquitoes of the anophiles genus;

(b) That those anophiles which become infected with the blood of malarial patients, have a chance to prick healthy individuals.

Such are the results of recent researches, and this double formula has a capital importance, as it has permitted us to begin upon a rational basis the struggle against malarial endemics.

Indeed, for this to be efficacious three means are indicated:

(a) *Energetic use of quinine in all infected individuals;* the multiplication of the hæmatozoa is thus prevented, the infection of the anophiles become impossible.

(b) *Destruction of the mosquitoes,* by suppression of stagnant waters. The growth of those insects demands the presence of still waters; females lay their eggs, which give birth to larvæ, then to nymphes, both aquatic, and finally to perfect

insects flying in the air ; therefore it may be said that where there is no stagnant water there are no mosquitoes, and therefore no malaria. The suppression of stagnant waters is often possible by drainage and drying, removal of useless reservoirs, of ponds or lakes, and when it is not possible, the destruction of the larvæ can be obtained in keeping fishes in the waters, or better, by the American process, the *petrolization*, which consists in pouring petroleum over the surface of the water ; this spreads in a thin layer and forms a covering which prevents the larvæ and the lymphes from breathing ; they die by asphyxia.

(c) *Protection of people against the pricks of the insects.*—The experiments of Grassi, Sambon and Low show that malarial fevers could be avoided in not letting infected anophiles bite healthy people, and healthy anophiles to come and infect themselves in pricking diseased individuals.

This protection can be obtained easily. Cullicids are night insects, which fly in myriads at sunset and rest during the day ; therefore, all that is necessary is to protect one during the night as follows :

(1) Not to allow the anophiles to enter houses by the use of fine metallic screens ; avoid light in the bedrooms.

(2) Use mosquito netting.

(3) Wash the face and hands with substances that chase the insects ; for instance, a maceration of quassia amara, which leaves on the skin a disagreeable taste.

(4) Individuals who have to be out at night shall carry a veil around the head, and closed tightly under the clothes round the neck ; use thick gloves and have lower parts of the legs of the pants tight, with lace or protected with leather gaiters. Wherever these have been seriously tried the disease has disappeared. The knowledge of the part played by mosquitos in the spreading of endemics of paludism shows its importance in the progress made since three years in its prophylaxy.

II. PIROPLASMOSES.—Hæmatozoa of malaria do not seem to exist in our domestic animals ; they are replaced by forms

very close to them, "the piroplasmas." The most known are those which produce an affection observed for the first time in Roumania, under the name of "bacterian hæmoglobinuria" of cattle (1888). It has been observed in various regions : in the United States (Texas fever, 1889), in Finland (hæmoglobinuria of Finland, 1894), in Sardinia (haematuria of Sardinia, 1895), in Italy (bovine malaria, 1897), in Australia, Transvaal, Turkey, Argentine Republic and Uruguay (tristeza), etc., etc.

Professor Mathis, in 1896, showed that the disease is also found in France, where it is ordinarily called "Mal de Brou." Its area of dispersion is therefore very large.

It is to Smith and Kilborne that comes the honor to have, in 1889, brought out the evidence in the blood of animals affected with Texas fever of an intraglobular parasite, partly seen the year before by Babes and that with right they did consider as the agent of the disease ; they named it *pirosoma bigeminum*, but later the name of the genus was left off and that of *Piroplasma* substituted for it.

The same authors have shown also that, like human malaria, the inoculation of bovine malaria was made by blood-sucker animals, the ixodes or ticks.

Such was our knowledge upon bovine piroplasmose when Lignières in 1900 took up the study of the question and advanced it. Having succeeded in cultivating the parasite *in vitro*, in the serum of diseased animals, he succeeded in reducing sufficiently its virulence to transform it into a vaccine. It is the first example of culture and of attenuation of an endoglobular, hæmatozoa, and for this Prof. Lignières received a prize from the Academy of Medicine in Paris.

The explanation given by Lignières of the immunity granted by a first attack of bovine malaria is very curious ; it may be called "the theory of the *latent parasitism* and of the *successive immunities*."

For Lignières, the *Piroplasma* does not act only in a mechanical way, by its presence in the middle of the globules ; it also secretes a toxic product, more or less analogous to micro-

bian toxines, which has for effect to reduce the resistance of the haematiæ to the entrance of the parasites.

But at the end the cells of the blood become accustomed to this product, in such a way that little by little, this resistance, for one instant reduced, reacts ; an instant arrives where the haematozoa can no longer grow, because they only find elements accustomed to the toxic product and remain in the condition of spores in the plasma of the blood ; from this instant, immunity is created.

Unfortunately, the toxines that are poured into the blood are eliminated little by little, and a day arrives when their quantity is too weak for the globules recently formed to get accustomed to them. Those globules remain thus infectable and are invaded by the spores which have remained in a *latent state* in the plasma. A relapse takes place, during which there is secretion of another dose of toxic product, which reinforces the globular accustomancy and renews the immunity.

Thus the total refractory state is the result of successive immunities, developing thanks to the *latent parasitism* of the piroplasmas.

Another result of those recent researches has been to show that piroplasmas are not observed in cattle. They have also been found in dogs, first in Italy, to the Senegal, then in France, where Nocard and Almy have clearly proved that in several cases, haemoglobinuria and jaundice were of piroplasmic origin.

They have also been seen with sheep in Italy and in Roumania, and it is probable that the cases of haemoglobinuria described by Leblanc and Savigni belong to that disease. Finally, they were observed in 1898 by Bordet and Danysz with horses in South Africa.

It is also likely that the observations of equine paludism, such as those of Pierre and of Dupuy, correspond in reality to the piroplasmoses or perhaps also to the trypanosomoses. Indeed, the horse does not seem susceptible to human malaria.

III. TRYPANOSOMES.—Grüby described the first trypano-

some, in 1843. It was then a living protozoa, parasite of the plasma of the blood of frogs, and since that time similar animalcules have been found in many vertebrates. But, notwithstanding their number, only little attention was paid to them, as none seemed to give rise to morbid troubles. It was only in 1880 that the idea of a trypanosome being pathogenic was entertained; it came from the observation of Dr. Evans, who at that time showed that one of the most severe anaemias of equines in India (Surra) was a function of a trypanosome (*Trypanosoma Evansi*).

Then, in succession, the same demonstration was made, in 1895, by Bruce with Nagana of South African bovines; in 1899, by Schneider and Buffard with dourine, and, finally, recently by Elmassian, with the "Mal de Caderas" in South American horses. Man seems to be entirely refractory to nagana; yet, Dr. Dutton has observed at Bathurst (Gambia) trypanosomes in the blood of a European, suffering with remittent fever, puffy face, oedema of the eyelids and of the lower extremities, while malaria could not be accused as the cause.

Then there are actually four trypanosomes, known and acting in the various parts of the globe.

The infusorias which produce them are very much like each other, and their analogies in aspect are such that it has been a question whether there were not but one parasite.

Koch, Nocard and Rogers think that surra and nagana are identical. They are indeed two diseases which attack the same species (horses, donkeys, cattle, camels, goats, sheep, pigs and dogs) and which present about the same symptoms: remittent fever, oedema of the genital organs and of the extremities, progressive anaemia, muscular debility, paresis of the hind quarters.

The "Mal de Caderas" is probably surra. On the contrary, dourine seems well a special affection; it proceeds more slowly, with specific symptoms, and, besides, its trypanosome differs a little from that of nagana. Another proof of its specificity has been furnished by Nocard. He has shown that dogs thoroughly immunized against dourine do not resist

the inoculation of nagana ; the agents of the two affections are certainly different species.

At any rate, there exists deep differences in their mode of transmission ; surra and nagana are inoculated by dipterous insects ; the fly tsetse (*Glossina morsitans*) for the first, the tropical horsefly (*Tabanus tropicus*) for the second.

In Abyssinia, Brumpt has observed that trypanosomas were inoculated to camels by a fly resembling the *Glossina morsitans*.

Flies, therefore, after sucking the blood of diseased animals, inoculate sound animals with the pathogenous trypanosomas ; it is different with dourine, which is transmitted only by the act of coitus.

A still more interesting point to notice in the history of the trypanosomas, relates to the researches made by Laveran and Mesnil on the trypanosoma of rats (*Trypanosoma Lewisi*).

They have demonstrated that patients recovered from a first infection are refractory to a second and enjoy immunity ; the parasites which are injected in their peritoneum are, in less than an hour, surrounded and digested by leucocytes.

They have also shown that the serum of those immunized animals possesses also a passive immunity whose mechanism is analogous to that of active immunity ; both resulting from stimulation of the phagocytes and consequently being of a cellular and not humoral order.

Those researches are of the highest importance, as they permit us to foresee the possibility of vaccinating animals against trypanosomas ; on that account they are similar to those of Lignières with the piroplasmoses.

IV. FILARIOSES.—It is about twenty years since Mauson mentioned the mosquito as being the agent of transmission of one of the filaria of man (*Filaria Bancrofti*). This worm, which when adult lives in the lymphatic vessels of the skin, stops the course of the lymph, thus giving rise to the formation of lymphatic varices, to the irritation of the vessels and the surrounding connective tissue, and at last to elephantiasis and chyluria. Embryos pass into the blood, but they are found in

the peripheral circulation only at night or rather during sleep, hence their name of *Filaria nocturna*.

This fact brought Manson to think that the agent of transmission might be a sanguinolent insect, having nocturnal habits — perhaps it was mosquitoes.

This supposition, which was proved true in 1878, has received lately a complete and brilliant confirmation by the works of Manson and Low, associated to those of Bancroft.

They have shown that, if a mosquito pricks an individual affected with filariasis, the embryos sucked in with the blood pass into the stomach of the diptera, then through its walls to reach the mass of its thoracic muscles, where after two or three weeks they are transformed into larvæ.

Those then travel to the head, collect in the pharyngeal cavity and one by one penetrate into the trunk of the mosquito; it is in that way that by every one of his pricks the insect inoculates one larva, in the same way that he inoculates the plasmodium of malaria. But different from malaria, the forms susceptible of carrying the germs of filariasis are not only anophiles; they are the mosquitoes, and principally the vulgar one (*culex pipiens-culex ciliaris*).

The case of filarioses of man is not unique. That of dog (*Filaria immitis*) is also transmitted in the same way, as was demonstrated in Italy by Grassi and Noé. Having dogs suffering with filariose pricked by *anopheles*, the two naturalists have first seen the embryos transformed into larvæ in the body of the insect. Then in a room well closed, where a healthy dog was, immobilized and gagged, they left several hundreds of infected anophiles free in the room; five months later, this dog had in its peripheral circulation embryos of filaria.

Here, also, the inoculation can be made with the *culex* as well as with the *anopheles*.

Those facts are of the highest interest, as they open new horizons upon the mode of propagation of the other filarias, whether they live as parasites of man (*Filaria Magalhæsi*, *Fil.*

Ozzardi, Fil. diurna, Fil. Demarquayi, Fil. persans, etc.), or are gathered from animals.

It is a long time since, for the first time, I heard professor Railliel express the supposition that the peritoneal filaria of horses (*Filaria equina*), now probably transmitted by the pricks of insect-suckers. The same supposition can evidently be made for others, specially *Filaria labialo-papillosa* of cattle, *Fil. haemorrhagica* and *Fil. reticulata* of horses. It is certainly in that direction that researches must be made.

Such are, rapidly considered, the principal discoveries relating haematozoa. Until comparatively recently mosquitoes have been considered only as annoying and disagreeable insects ; now we find them pathogenous and carriers of several parasitic diseases of great severity.

Besides, there is no doubt that they inoculate other infections. It has already been demonstrated with yellow fever, carried to Cuba by the *Culex fasciatus*; the same will probably be demonstrated soon for horse-sickness of South Africa and for lepra. If one thinks how numerous mosquitoes are he can appreciate the danger that threatens us and the necessity of destroying them.

OLDEST HORSE IN AMERICA.—What is probably the oldest horse in America is owned by Major Robert Mass, of Louisville, Ky., who has papers proving its age to be over 47 years. He is named Ivanhoe, and is a large bay, with a blaze face, and up to a year ago of a very docile disposition ; of late, however, he has grown irritable, and almost vicious towards strangers ; to his master and the children he is the same as ever. He bears on his right flank the scar of a gunshot wound received at the battle of Buena Vista, in the Mexican campaign, where he was ridden by the grandfather of the major. He was also used as a charger in the civil war, and three separate times when his rider was unhorsed found his way home to his pasture.—(*Horse-Shoers' Journal.*)

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A STUDY OF THE MORPHOLOGY OF THE BLOOD OF THE HORSE.*

BY SAMUEL HOWARD BURNETT, A. B., M. S.

In human medicine the examination of the blood has passed beyond the experimental stage and taken its place as a valuable aid to the practitioner. In certain few diseases, such as malaria, leukæmia, and filariasis it gives full information for a diagnosis; in very many affections, such as the anæmias, pneumonia, typhoid fever, diabetes, malignant tumors, and suppurative processes, it is of valuable assistance; and in many other cases the negative data revealed by a blood examination aids materially in distinguishing diseases otherwise closely resembling each other, such as Hodgkin's disease and leukæmia.

In veterinary medicine but little if any use of blood examination has been made except in the diseases caused by haematozoa, as Surra, Texas or Southern Cattle Fever, filariasis, and the like. It would seem that in the domesticated animals a blood examination would be of even greater value than it is in man, because of our dependence wholly upon objective symptoms. Speaking of the value of blood examination Cabot † says, "Like all methods of physical examination it has especial usefulness when we cannot communicate with a patient."

A search through veterinary literature shows that very little work has been reported concerning the morphology or the clinical value of the examination of the blood of the horse. That the need of a more thorough knowledge of the structure of the blood in both health and disease is a real one has been well shown in numerous obscure cases in the clinic and in certain investigations undertaken at this College.

The objects of this investigation were to determine the structure and the condition of the blood (1) of the healthy horse and (2) that of horses suffering from various disorders that were

* Thesis presented to the faculty of the New York State Veterinary College for the degree of Doctor of Veterinary Medicine, 1902.

† Cabot—*Clinical Examination of the Blood.* Third Edition, 1898.

brought to the College clinic. As yet but a beginning has been made, although the results are of sufficient interest to offer in the hope that they may be of some assistance to those seeking help from haematology.*

METHOD OF PROCURING BLOOD FOR EXAMINATION.

If the blood is desired only for an examination in the fresh condition, or for making films, it may be obtained most readily by a puncture from the inside of the lower lip near the commissure. When more blood is needed as when a count of red or white corpuscles or an estimate of haemoglobin is to be made, a larger incision and consequently another site are necessary. For this purpose I have made the incision on the croup or on the middle of the side of the neck. The croup has the advantage of having a more nearly horizontal surface whereas the blood flows away more easily from the neck. However, I have selected the neck, as a rule, as the skin is thinner and seems to be more vascular.

The preparation of the skin is simple. Where the lip is selected, all that is necessary is to wash the site with water and dry with a clean towel. Where the neck or croup is selected, the part should be disinfected. As the blood does not come in contact with the epidermis, but must be taken from the incision, it has been found that it is not necessary to shave off the hair. This is fortunate, as the shaving produces a slight blemish that is often objectionable to the owner. All that is needful is to wet and part the hair, wash the skin where exposed in the parting, and apply a disinfectant; (five per cent. carbolic acid.)

* For the technic and methods of examination the reader is referred to the following standard works on haematology :—

Ewing—*Clinical Pathology of the Blood.* 1901. Lea Brothers & Co., Philadelphia and New York.

Full bibliographies of the various parts of the subject are given in this work.
Cabot—*Clinical Examination of the Blood.* Third Edition. 1898. Wm. Wood & Co., New York.

Coles—*The Diseases of the Blood.* 1898. J. & A. Churchill, London.

DaCosta—*Clinical Haematology.* 1901. P. Blakiston's Son & Co., Philadelphia,

If the instrument is sharp the animal will scarcely notice the puncture or incision. Where blood is taken from the lip, puncture is made with a blood lancet having a broad blade. I have used an automatic lancet with a blade about two millimeters broad. A narrow one does not yield sufficient blood. On the neck or croup a spring fleam was used having a rather wide blade. The depth of the incision, which should be well through the skin, is regulated by a set screw. An ordinary fleam will answer, and is to be preferred to a scalpel or lance.

The wound from the fleam heals readily. After sufficient blood has been obtained, the edges of the wound are held together for a few seconds until they adhere. On the following day it requires careful search to find the scar.

During cold weather some trouble may be experienced in getting sufficient blood. Smith* has called attention to this fact. He said it was impossible to make satisfactory preparations with a temperature below 50° F. With a temperature somewhat above 50° F. the peripheral vessels are generally contracted. I have found it to be of advantage to stimulate the peripheral circulation by holding a hot cloth on the skin or by gentle friction of the part before making the incision. By warming the skin and by having pipette, slides and cover glasses warm I have made successful examinations with the temperature at 47° F. Rapidity is essential to success as the blood soon changes in contact with the air and the flow of blood soon ceases. For examination in the fresh condition I used a platinum wire with a loop large enough so that the contained drop spread without pressure under the entire cover glass. It was generally impossible to touch the center of the cover glass to the drop of blood except when the puncture was made on the lip. The red corpuscles were counted by Thoma's apparatus, using Toisson's diluting fluid, in every case counting the corpuscles in at least one hundred squares on each of two slides.

* Investigation into the Nature, Causation, and Prevention of Texas or Southern Cattle Fever. Bureau of Animal Industry, Bul. No. 1, 1893.

In getting an estimate of the haemoglobin both Gower's and Oliver's haemoglobinometers were used. Oliver's is more accurate and has the added advantage of requiring a smaller amount of blood.

The specific gravity was obtained by adding a drop of blood to a mixture of chloroform and benzene of about the same density as blood, then adding either benzene or chloroform till the drop is of the same density as the drop of blood. This is indicated by the drop neither sinking nor rising in the mixture. Then the specific gravity of the mixture is taken by means of a urinometer in the same manner as for urine.

The number of leucocytes was obtained by using the special pipette in the counting apparatus for leucocytes. The entire ruled space of two slides, eight hundred squares, was examined. There is an advantage in routine examinations in using a single pipette for both red and white corpuscles, as it requires less blood and shortens the time for collecting. In making differential counts of the leucocytes at least five hundred corpuscles were examined, but usually a larger number.

Films were spread on slides in the manner recommended by Ewing.* The edge of the slide was touched to the surface of the blood then it was applied to the surface of another slide at an angle of about 45° and drawn slowly with uniform pressure giving a thin film. This method is much preferable to that of spreading on cover glasses, and infinitely more so than the older method of Ehrlich, that of letting the blood spread between two covers and then drawing them apart. The dried films were fixed by heat, by ether and absolute alcohol, equal parts, or by Wright's Method.†

When heat was used the films were placed in an oven and kept for twenty minutes at a temperature of 120° C., then allowed to cool gradually. A more rapid means, but less uniform in its results, is to fix over a direct flame for about two minutes

* Clinical Pathology of the Blood. 1901, p. 47.

† Wright—A Rapid Method for the Differential Staining of Blood Films and Malarial Parasites. *Journal of Med. Research.* Vol. VII, No. 1. Jan. 1902, p. 138.

(Ewing loc. cit. p. 48.) passing the slide or cover, film side up, through the flame.

With ether and alcohol, the fixation is complete in half an hour. Several, about twelve, hours fixation is preferable if Ehrlich's triacid stain is to be used. The reagent should be kept in a glass stoppered bottle and even then needs to be renewed rather frequently. Absorption of water is indicated by vacuolization of the red corpuscles.

Wright's * method is the most rapid and convenient as fixation and staining are done simultaneously. The dried film is flooded with the stain for about one minute, then distilled water is added drop by drop until a metallic film appears on the surface and the liquid becomes semi-translucent. This is allowed to act two or three minutes then the slide is washed in distilled water until the red corpuscles have an orange or pink color. The excess of water is then absorbed with filter paper and the preparation allowed to dry in the air. It is then mounted in neutral Canada balsam.

For clinical work Wright's method is to be preferred on account of its rapidity and its differential staining of the different elements of the corpuscles. Basophile, eosinophile, and neutrophile granules are clearly differentiated and readily distinguished. The method of staining is given above.

Eosin and methylene blue give excellent results. With it all the normal leucocytes are readily distinguished. The films are stained a few seconds with a saturated alcoholic solution of Ehrlich's blood eosin, rinsed in water, and then stained for about a minute with a saturated aqueous solution of methylene blue (Grübler), and again washed hurriedly in distilled water,

* It is prepared as follows : (After Wright) A one percent. solution of Methylene blue (Grübler) is made in a one half percent. solution of sodium bicarbonate and steamed for a full hour. The solution is cooled and to it is added gradually with constant stirring a one-tenth percent. solution of eosin (Grübler, yellow, water soluble) until a yellowish metallic scum appears on the surface and a fine granular black precipitate appears. This takes about 500 c. c. of eosin solution to 100 c. c. of methylene blue solution. The precipitate is collected on a filter and allowed to dry thoroughly. A saturated solution is then made in pure methyl alcohol. 100 c. c. of the methyl alcohol will be sufficiently saturated by .3 gram of the precipitate in a few minutes. This saturated solution is then filtered and one-fourth of its volume of methyl alcohol is added to the filtrate. This is the fixing and staining fluid.

the water remaining on the slide being absorbed by filter paper. The films are allowed to dry in the air and are then mounted in neutral Canada balsam.

Ehrlich's triacid stain* gives uniform results but is not satisfactory except for neutrophile granules.

Heat is preferable to other methods of fixation for this stain. If ether and alcohol is used the time of fixation should be several hours, otherwise the red corpuscles will be so deeply stained of a purplish color that the leucocytes will not be so readily distinguished.

MORPHOLOGY.

Red Corpuscles (Erythrocytes).—In the fresh condition red corpuscles are of a yellowish color with a small nearly translucent area in the center, the delle. Many of the corpuscles that adhere to the glass appear to be uniform throughout, the clear central area being lost. The red corpuscles vary greatly in size. In fresh blood the average diameter of those measured was between 5.8μ and 5.9μ the extreme being 3.8μ and 7.8μ . Sussdorf † gives the normal size for the horse as 5.8μ . In films fixed by ether and alcohol, the red corpuscles are slightly smaller, the average diameter being 5.76μ , the extremes being 4.5μ and 9.0μ . With heat fixation the size is still smaller, being between 4.3μ and 6.8μ , the average 5.55μ . Fixed by osmic acid or Flemming's fluid the corpuscles had an average diameter of 4.8μ .

Leucocytes.—Five varieties of leucocytes were observed in the circulating blood, namely—lymphocytes, large mononuclear, polynuclear, eosinophile, and mast cells. The diameter of leucocytes depends upon the method of preparation. They are

* Formula :

Sat. aq. sol. Orange G.....	120 to 135 cc.
" " " Acid Fuchsin	80 to 165 cc.
" " " Methyl. green	125 cc.
To these add Aqua.....	300 cc.
" " " Absolute alcohol	200 cc.
" " " Glycerin	100 cc.

† Ellenberger, Handbuch der vergleichende Physiologie der Haussaugethiere. 1890, p. 180.

larger in smears than in fresh blood, and larger in thinly spread than in thick films, so that much value cannot be placed on measurements. In films the lymphocytes were found to be from 4.6μ to 11.0μ in diameter, the average size being slightly larger than that of red corpuscles. Large mononuclear leucocytes were found from 9.0μ to 15.2μ in diameter, the average being about 11μ . Polynuclear leucocytes were found from 8.1μ to 16.4μ , the average being 12μ . Eosinophiles were found from 8.6μ to 15.2μ the average diameter being about the same as for polynuclear. Only a small number, about twenty, mast cells were measured. The average diameter was 15.3μ the extremes being 11.6μ and 17.6μ .

Lymphocytes and large mononuclear leucocytes when unstained do not show distinct granules. Fine granules serve to distinguish the polynuclear and large refractive granules the eosinophiles. The nucleus is compact and somewhat refractive in lymphocytes, vesicular in the large mononuclear, compact and variously lobed, twisted, bent, or coiled in polynuclear and eosinophiles. The addition of one-third per cent. acetic acid



FIG. 1.

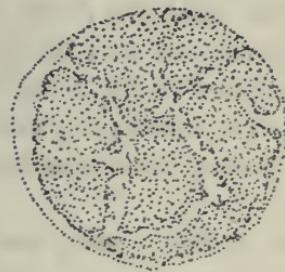


FIG. 2.

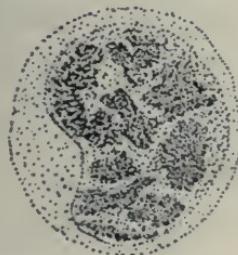


FIG. 3.

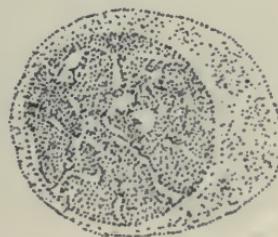


FIG. 4.

brings out the nuclei clearly. Polynuclear and eosinophile leucocytes possess active ameboid movements.

Lymphocytes in films stained with Ehrlich's triacid stain have a well-stained coarsely reticular nucleus of a bluish green color. It occupies nearly all of the cell, only a narrow rim of cytoplasm extending around it. The outline of the nucleus is generally circular, but is found incurved or with a notch or deep sinus in one side. The cytoplasm has a purplish tint. Sometimes there is a narrow unstained zone about the nucleus.

With eosin and methylene blue (Figs. 1-4) the nucleus and cytoplasm are stained blue with a more deeply stained reticulum. Generally the nucleus is more deeply stained, but is often less deeply stained than the cytoplasm.

With Wright's method the nucleus is a purplish color with more deeply stained reticulum. The cytoplasm is a greenish blue; it may be a pale pink, depending on the extent of the differentiation. The nodal thickenings of the reticulum are greenish, sometimes pale, sometimes deeply stained.

It is impossible to draw a sharp dividing line between the lymphocytes and the large mononuclear leucocytes, as every grade of transition may be found between the two type forms. I have included in the large mononuclear the forms having a vesicular oval or curved nucleus that occupies one-half or two-thirds of the cell and is commonly situated at one side of the cell.

With Ehrlich's stain the nucleus is pale bluish green and

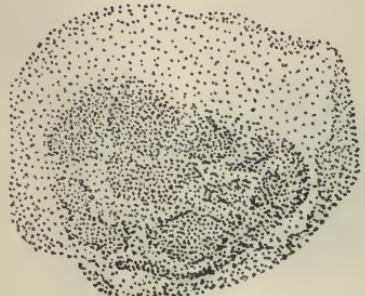


FIG. 5.

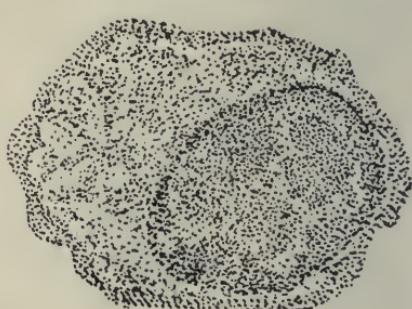


FIG. 6

the cytoplasm has a purplish tint. Both nucleus and cytoplasm are more finely reticular than in the lymphocytes.

With eosin and methylene blue the nucleus (Figs. 5 and 6) is not so deep a blue as in the lymphocytes. It may have several deeply stained areas that resemble nucleoli. The cytoplasm is of a pale blue color.

With Wright's method the nucleus is purplish with deeper stained reticulum. The cytoplasm is of a greenish blue color. Both nucleus and cytoplasm are less deeply stained than in the lymphocytes.

Polynuclear leucocytes with Ehrlich's triacid stain have the nucleus stained a pale bluish green tint. The form of the nucleus varies greatly, those most commonly seen being elongated, twisted, spirally coiled, S shaped, or U shaped. The cytoplasm has a purplish or pinkish tinge and contains many fine, deeply stained, purplish granules.

With eosin and methylene blue the nucleus (Fig. 7) is



FIG. 7.

sharply stained with methylene blue and is coarsely reticular, while the protoplasm is faintly stained with eosin. Sometimes the protoplasm has a faintly bluish tint. Granules are not apparent except occasionally in preparations overstained with eosin, when they may be of a bright pinkish tint.

With Wright's stain the coarsely reticular nucleus (Fig. 8) is sharply stained purplish, while the cell body is of a pinkish color. The granules are of a bright reddish violet color.

Eosinophiles are about the most conspicuous of the leucocytes whether stained or unstained. When unstained the granules are refractive and have a greenish white tint. The



FIG. 8.

size and shape of the granules varies widely. They are ordinarily 1μ to 1.5μ in long diameter. Their outline is round, oval, ovate, or oblong. In the living cell undergoing amoeboid movement the shape of the granules may be seen to change. The number of granules in a cell is usually from 10 to 40.

Stained with Ehrlich's triacid stain the nucleus is pale greenish. The most common shape is bi-lobed. The granules are copper colored.

With eosin and methylene blue the nucleus (Fig. 9) is

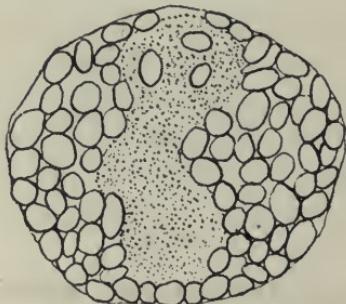


FIG. 9.

blue, coarsely reticular, resembling the nucleus of the polynuclear leucocyte, though not so deeply stained.

With Wright's method the nucleus is purplish, resembling in general that of a polynuclear leucocyte. The granules are of a rosy red tint.

Mast cells with Ehrlich's triacid stain are difficult to distinguish as the granules are not stained. The nucleus is usually bi-lobed with a thick connecting part; but is sometimes shaped somewhat like that of a transitional leucocyte.

With eosin and methylene blue the nucleus is pale blue, often showing a deeper stained coarse reticulum.

The granules are of different sizes, from minute dots to round, oval, or circular granules slightly smaller than the average eosinophile granule. They are of a deep blue color.

With Wright's method the nucleus (Fig. 10) is pale blue,

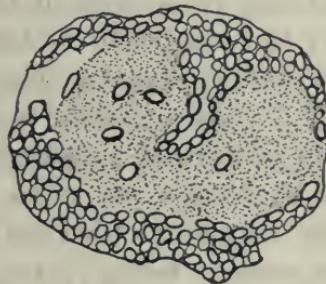


FIG. 10.

the cytoplasm a faint pink, while the granules are stained a deep purplish color.

The following table gives the results of the examination of the blood of eleven horses.

TABLE I.—EXAMINATION OF THE BLOOD OF ELEVEN HORSES.

Horse No.	Age	Sex	Red Corpuscles per c. mm.	Leucocytes per c. mm.	Percentage of hemoglobin	State of health from clinic records.
1	14	m	5575000	6650	58	Asthma.
2	13	f	4400000	5000	61	In poor condition.
3	12	m	5750000	18800	61	Fistulous Withers.
5	12	f	6600000	12850	73	Spavin and Ringbone.
6	13	f	7168000	7814	63	Spavin.
7	14	m	7900000	6562	71	Chronic Spinal Affection.
8	7	f	4880000	19500	59	Œdema in one hind leg. Lymphangitis?
9	13	m	7060000	9958	61	Quittor.
11	10	f	7900000	12166	68	Fistulous Withers. Pregnant.
13	4	m	5270000	5250	45	Helminthiasis?
15	5	m	6700000	16900	68	Suppurating wound on foot.

EXAMINATION OF CASES.

Blood examinations were made from comparatively few cases. Of these animals the majority were suffering from some disorder; two (Nos. 1 and 2) were purchased for anatomical dissection. None of these were normal animals.

Although the examinations were too few to warrant making generalizations from them, yet a study of the above table gives a hint as to what may be expected to be found in the blood of horses, and also gives interesting data concerning certain affections. Attention will be drawn to these later.

The red corpuscles in thirteen subjects was found to be between 4,410,000 and 8,980,000 per cubic millimeter. Sussdorf, *loc. cit.*, gives the normal number for the horse as 6,500,000 to 8,000,000, the average being 7,212,500. Cadeac* gives the normal as 5,000,000 to 6,000,000. In the above table it will be noticed that when the red blood corpuscles are below 6,000,000 the subjects were in poor condition.

The leucocytes vary from 5,050 to 19,500 per cubic millimeter. The larger number was found in a horse in which the circulation seemed to be sluggish. It was probably a case of lymphangitis. The others, with about 10,000 or more leucocytes, occurred in subjects in which active inflammation was taking place. In three cases, Nos. 3, 11, and 15, there was chronic suppuration with discharge. No. 5 was affected with a constitutional disease of the bones, ring bone and spavin.

The percentage of haemoglobin was found to vary from 45 to 73. A percentage of 91 was found in one case in which unfortunately a count of red corpuscles was not made. The average is one per cent. of haemoglobin for about 100,000 corpuscles. This is a slightly greater percentage than would be if the corpuscles were of the same shape and contained relatively the same amount of haemoglobin as human red corpuscles, considering the diameter of the equine corpuscle as 5.8μ and that of the human as 7.5μ and the number per cubic millimeter as respectively 7,200,000 and 5,000,000.

* Cadeac-Semiologie-Diagnostic et Traitement, 1894, p. 333.

The specific gravity was taken in only two cases, No. 11 and 15, where it was 1054 and 1050 respectively. Sussdorf, *loc. cit.*, gives the normal for the horse as 1060.

The following table gives an analysis of the leucocytes found in the different horses:

TABLE II.—AN ANALYSIS OF THE LEUCOCYTES IN THE DIFFERENT CASES WITH THE PERCENTAGE AND NUMBER PER CUBIC MILLIMETER OF EACH VARIETY

Horse No.	Leucocytes per c. mm.	Lymphocytes.	Large Mononuclear	Polynuclear.	Eosinophile.	Mast Cells.
I	6650	21.96%	3.13%	73.92%	0.98%	
	1460	208	4914	65		
2	5000	29%	5.45%	63%	2.4%	
Dec. 16	1450	272	3150	120		
2	7100	19.2%	4%	72.4%	4.4%	
Jan. 2	1363	282	5140	312		
3	20333	19.4%	2.1%	75.9%	2.5%	0.1%
Feb. 7	3944	426	15432	508	20	
3	16277	36.75%	3.75%	55.25%	3%	1.25%
Feb. 26	5981	610	8993	488	203	
5	11500	18.54%	4.67%	75.32%	1.45%	
March 13	2132	537	8661	166		
5	14200	35.2%	1.6%	59.4%	3.8%	
March 25	4998	277	8434	539		
6	7814	24%	2.2%	71.4%	1.2%	1.2%
	1875	172	5579	93	93	
7	6562	8.25%	2.12%	87.62%	1.87%	0.12%
	541	139	5749	122	7	
8	19500	49.16%	4.33%	40.83%	4.83%	0.83%
	9586	844	7961	941	161	
9	9958	16.71%	4.84%	69.06%	8.59%	0.78%
	1662	482	6876	855	77	
11	12166	11.8%	4.38%	83.57%	0.09%	0.14%
	1435	532	10167	11	17	
13	5250	31.33%	5.66%	59.33%	1.66%	2%
	1645	297	3114	87	105	
15	16900	44.53%	6.06%	44.06%	4.8%	0.53%
	7525	1024	7746	811	92	

The percentages of the several kinds of leucocytes in the above table are based on counts of three hundred corpuscles for No. 13 and of 500 to 2100 for each of the others.

The lymphocytes were found to vary widely. The smallest number found was 541 per cubic millimeter, which was eight and one fourth per cent. of the leucocytes. The largest number 9,586 per cubic millimeter, which was 49.16 per cent. of the leucocytes, was found in a horse, No. 8, which was affected with lymphangitis. It will be noted that in No. 5 examinations made twelve days apart show a marked change in the lymphocytes. During this time the lymphocytes had increased from 2132 per cu. mm. to 4998 while there had been a decrease in the number of polynuclear leucocytes.

In the other cases where there were 2,000 or more lymphocytes there was chronic inflammation with suppuration.

The large mononuclear leucocytes varied from 139 to 1024 per cu. mm. The large lymphocytes with deeply stained cytoplasm were not classed with the large mononuclear leucocytes.

The polynuclear leucocytes varied from 3,114 to 15,432 per cu. mm. The higher numbers occurred in cases of chronic inflammation. In Nos. 9 and 15 which were cases of chronic inflammation with suppuration, quittor and suppurating wound in the foot, there is not so marked an increase in the polynuclear leucocytes. These latter cases also have a very large number of eosinophiles.

The number of eosinophiles was found to vary from 11 to 941 per cu. mm.

No mast cells were found in the blood of Nos. 1 and 5. None are reported for No. 2 in the table, but they were found in examinations made at other times than those reported. Their absence is doubtless due to not enough leucocytes having been examined. In No. 3 but one mast cell was found among a thousand leucocytes examined. The largest number of mast cells found was 203 per cu. mm. which was one and one-fourth per cent. of the total number of leucocytes. The highest per-

centage found was in number 13, a supposed case of Helminthiasis.

Though the data given above are not conclusive yet they agree with what has been observed in man and in experimental animals. There is a polynuclear leucocytosis in active inflammations. When the lymphoid tissue is involved there is a lymphocytosis. It would seem therefore, that an examination of the blood would give valuable aid to the practitioner in making a diagnosis in cases of inflammation too deeply seated for detection by ordinary physical examination. The diseases affecting the bones and the parasitisms seem to produce marked changes in the blood. It would be premature to state just how much may be obtained from a blood examination. There is need of more work being done in this line of investigation. Blood coming in contact as it does with all the tissues of the body may be expected to give evidence of the deeply seated changes that are taking place. It is impossible, as a rule, to study the tissues during the life of the patient and to discover just what pathological changes are taking place. The blood, however, is always available for examination and offers a readily accessible means for detecting the existence of disease processes.

In conclusion, I desire to acknowledge my indebtedness to Dr. V. A. Moore for advice and assistance freely given in making these examinations and to Drs. Law and W. L. Williams for the use of subjects in the College clinic.

MANGE IN CATTLE AND HORSES.—The Nebraska Experiment Station has just issued Bulletin No. 74, on "Mange in Cattle and Horses, and Lice on Hogs," prepared by Station Veterinarian A. T. Peters. The bulletin contains illustrations of the mite causing cattle mange, animals affected with the disease, animals swimming through the tank, etc., together with construction of dipping plants for cattle and swine. The bulletin may be obtained free of cost by residents of the State upon writing to the Agricultural Experiment Station, Lincoln, Neb.

EXTERNAL ULCERATIVE ANO-VULVITIS.

By S. T. MILLER, D. V. S., SHELBY, IA.

Read before the 14th Annual Meeting of the Iowa State Veterinary Medical Association,
Feb. 11 and 12, 1902.

My attention was first called to this disease in the winter of 1897 while at Kansas City, when Dr. Steddom with other inspectors of the Bureau of Animal Industry were sent into Kansas to investigate a peculiar outbreak of disease among cows and heifers. On their return to Kansas City they reported a disease affecting the vulva of cows and heifers. From their report Dr. Sesco Stewart, of Kansas City, made a verbal report of the disease at a meeting of the Missouri Valley Veterinary Medical Association. The next article was that by Dr. C. Miller, of Ottumwa, which appeared in the AMERICAN VETERINARY REVIEW for April, 1901.

My attention was next called to an outbreak in my brother-in-law's herd near Harlan, Ia., in the winter of 1900. My brother, Dr. D. H. Miller, was called to treat that outbreak. Drs. J. I. Gibson, John J. Repp, and S. H. Johnston also visited the outbreak. The next outbreak occurred in my own practice about October 15th, 1901. In the herd there were 23 head of cows and heifers and 4 steers. On first examination I found only two or three calves affected. In about 3 or 4 days I was surprised to find all except one old cow affected, including the 4 steers.

The next outbreak occurring in my own practice was about Nov. 23, 1901. There were on the farm about 35 head of cattle, including cows, heifers, steers and calves. About half of the number were found to be affected, but there were no steers affected in this herd.

The next case was that of 26 head in a feed yard, 22 steers and 4 cows, of which 4 cows and 8 steers were affected. Some of the steers were affected very badly. On the same farm there were about 25 head of pure-bred shorthorn cattle and 50 grade stock cattle. None outside the feed yard have shown any signs of the disease.

The first noticeable symptom was serous exudate, rapidly forming into a brown scab, under which was very foetid pus, with extensive inflammation. The affection usually occurred on the lower portion of the lips of the vulva in heifers and cows, and in steers around the anus or roots of the tail. The scabs which formed seemed to spread very rapidly, destroying more and more of the underlying tissue and forming a thicker and thicker scab. The scab if peeled off would expose a raw surface, which would bleed very readily. In a short time a new scab would be formed.

In the herds Nos. 1 and 3, I used for treatment a wash of a strong solution of mercury bichloride to cleanse the parts, after which I applied an ointment made up as follows :

Iodoform,	20 grains
Oil of eucalyptus,	40 minims
Carbolic acid,	20 "
Petrolatum enough to make	2 ounces.

This treatment effected a very speedy and permanent cure. The animals in herd No. 2 were never treated, but are slowly recovering.

DISCUSSION.

Dr. Repp described the gross and microscopic morbid anatomy of the disease. He said he had made some research in connection with Dr. Miller's outbreaks Nos. 1 and 2.

Dr. Brimhall, in answer to a question, said he had not met with the disease in Minnesota. He asked if any one had made any observation as to whether or not the disease is contagious.

Dr. S. T. Miller replied that he had witnessed a case in which a bull from a healthy herd had gained access to a herd in which the disease existed, served cows there, and soon afterward served cows in the healthy herd, yet none of the healthy cows acquired the disease.

DR. LIAUTARD writes from Paris, June 16: "Dr. Wm. Dougherty has just been here for a week. I did my best to Parisianize him, but am afraid I failed. He is well, and has left for Aux-les-Bains, to be scraped, rubbed and rested."

OHIO COMBATING TUBERCULOSIS.

BY J. C. BURNESON, VETERINARIAN OHIO AGRICULTURAL EXPERIMENT STATION, WOOSTER, OHIO.

Read before the Ohio State Veterinary Medical Association, Jan. 14th, 1902.

In the preparation of this brief paper I have found much difficulty in treating the subject as it deserves without infringing somewhat upon the original thoughts of others. The subject of tuberculosis has been so frequently discussed and written from every view point during the past few years that one can hardly say anything concerning it without almost quoting the words of some other writer upon the subject.

I do not wish to touch upon the pathology of this disease, as you will no doubt have ample opportunity to debate upon that part of the subject at the reading of the paper prepared by Dr. Kent, but will confine myself to a very brief report of the tuberculin testing of cattle throughout the State by the veterinary department of the Experiment Station and the attitude of the herd owners, the sanitary conditions found and some few closing thoughts on legislation.

The testing of cattle has been entirely optional with the herd owners, and therefore the herds which have been inspected are those where application has been made by the owners. The majority of the herds inspected have been small, country herds, subject to a life of pure air, sunshine and exercise. Nearly their entire life has been spent in open air and it is a well-known fact that these herds are the healthiest to be found in any country; however, 14.69 per cent. of 1300 animals inspected have been found tuberculous in spite of the most healthy surroundings, while 3.06 per cent. of the remaining animals were found suspicious. More than half the herds inspected were found infected. My experience indicates that the nearer the city one approaches the higher the percentage of tuberculous animals found, and I have also learned that this territory of the dairyman, is very hard to invade under the present conditions for inspection. It is perhaps needless to state to this body of veterinarians that the

very individuals whose herds we most desire to inspect are the very ones who do not care to have anybody about who may even perchance detect anything wrong with the animals of their herds. I mean the large dairymen near our cities, and breeders. The majority of these men will never have their herds inspected until laws, either municipal or state, are enacted, compelling them to do so. The conditions for inspection have certainly not been burdensome to the herd owner;—no expense except the board of the veterinarian during the inspection and his transportation from and return to the nearest railway station; no destruction, or even condemnation of cattle found tuberculous, advice given as to what course to pursue to eliminate the disease from the herd should it be found therein. Surely these are conditions liberal enough and light enough for any sturdy herd owner to bear should he care to learn the status of his herd. It is not lack of education upon this subject which causes hesitation, because at nearly every dairy meeting, farmers' institute, or agricultural meeting of any kind this theme has been most interestingly read and discussed; besides almost every agricultural journal has published articles of much interest concerning this disease. 'Tis true, many articles have been published by certain papers derogatory to the tuberculin test, but they have been written by those who never tested a cow, or perhaps never saw one tested. They have picked the dross from the gold and with it forged a sword, the wielding of which is only too apparent. This has been done for selfish motives alone, entirely regardless of the true conditions of the herds and the future outcome. These men, who should be the promoters of any movement towards bettering the physical conditions of the animal industry of their country, have but shown their hands as they really are. The dairymen seem to be willing to keep the dross (or a diseased herd) in preference to the pure gold (or a herd purified by the refining process of the tuberculin test). They hold the arguments of those writers up before them as a fortification. I think the true sentiments of a very great majority of the dairymen and breeders were expressed by the very frank words of a

dairyman near Columbus when he said to me "what I don't know don't worry me."

The reasons of the great prevalence of the disease among these large herds are, 1st : large numbers of cows are found crowded together, generally without adequate hygienic facilities, or if the necessary facilities are present, during the inclement weather when the herd is kept in its quarters these facilities are closed in order to make the quarters comfortably warm, and thus facilitate the production of milk. There seems to be a mistaken idea prevalent among the herd owners that a window in a barn is only for the admission of a stream of light during cold weather. I have inspected herds which were confined in barns so tightly closed that one had to blink his eyes upon entrance, owing to the foul air which rushed through the doorway. Then again some dairy barns are so well lighted, ventilated and cleaned, that it is certainly a great pleasure to meet with such a welcome contrast. We all know that if ventilation be neglected it will lead to a lessened vigor of the body tissues and eventually be a potent cause of injury and loss to the dairyman. There should be no perceptible difference between the freshness of the air inside and that outside, although no draught should be allowed to pass through the building. One thousand cubic feet per animal should be allowed with good ventilation. All stables, the measurements of which I have taken, have fallen far short of this figure, with one exception ; this contained 1537 cubic feet per animal, but the ventilating facilities were only fair ; the remainder varied from 177 to 648.28 cubic feet of air space per animal. In this estimate I have, of course, deducted the space occupied by the animals which the quarters were arranged to accommodate.

Exercise is another great necessity which is found wanting in these large dairies during the winter months. A walk to the water-trough nearby, sometimes inside the stable, while some herds even drink the water as they stand in the stall, having it continually before them, regulated by floating valves. The city dairy herd is also continually receiving new additions

from the market, which in many cases are tuberculous animals shipped there for the purpose of disposal away from home to prevent any recourse. In my travels I frequently hear of scavengers waiting to learn the results of the test in order to take off the hands of the owner any cows which he might want to dispose of. These cows are generally shipped to market and thus pass to those who are always on the lookout for new cows.

These serious complications must be considered before the ravages of tuberculosis can be reduced. It is these causes which are largely responsible for the present condition of things, and so long as they are in operation we can never make satisfactory progress. Of course, it may be many years before ideal conditions attended by their perfect results, are possible, so the improvement of existing conditions should be pushed as rapidly as possible, taking the most seriously threatening problems in their order, and the result is obvious to all.

Legislation, of course, is of paramount importance in the suppression of this disease. Other States have legislated, some good, some bad, and some indifferent. Ohio should profit by the experience of these States by carefully considering all obstacles which have arisen in their paths and avoiding them as much as possible. While some may consider this an easy matter, I believe it will be a very puzzling problem to handle. "Many people make many minds," and what one may consider an injustice another may consider perfectly just.

The questions of the disposal of affected animals and compensation, or no compensation, I believe to be *the* puzzling problems. The question of property rights cannot be shaken off in the consideration of this problem. The State, we will learn, will in no way be inclined to place upon itself anything which may become a financial burden; while on the other hand the herd owners will not feel disposed to be the sole losers for the welfare of the commonwealth, both as regards the possible transmissibility of the disease by the sale of their dairy products, or the restrictions which may be placed upon them in regard to the disposal of their affected animals, as in many cases the loss

to the herd owner would be the straight road to certain financial ruin, providing no compensation be allowed by the State. I do not wish it understood that I am in favor of indiscriminate slaughter, but I have seen herds where a great number could be separated from the others by sight alone, without the trouble of giving them a careful clinical examination, and such animals you will doubtless all concede should be slaughtered without delay. There are cases which the State should take in hand and dispose of and should indemnity be allowed, it should not be sufficient to encourage traffic in this direction. The State should not be a profitable market for scavengers.

Another point which should be carefully guarded in case of legislative consideration is the possible substitution of some farce inspection for the detection of this disease. This is a point which should not be overlooked, as local boards of health have done this very thing and the inspection of their dairy herds is a complete burlesque from beginning to end. The intelligent administration of tuberculin as a diagnostic agent by competent veterinarians should be underscored, as the veterinary profession well knows ere this, "there is many a slip twixt the cup and the lip" in regard to our legislative desires. The State should prohibit the importation of breeding and dairy animals until they have been proven by the tuberculin test to be free from that disease. Dairy inspection should be compulsory and the proper authorities should at once perfect a system commensurate with the vast importance of the subject. Scavengers should be summarily dealt with, as it is certainly a crime for one to run a hotbed of tubercle bacilli, thereby being a great source of dissemination of so dangerous and destructive a disease as we have now to struggle against. It would be well for every city to emulate the ordinance in vogue in the city of Minneapolis. I think this is the nearest to perfection for its purpose I have yet seen. It is simply a matter of license or no license, to sell milk within the city, therefore cannot be considered extra territorial.

I would like to hear an animated discussion on the subject

of legislation by this body of representative veterinarians of the State. I do not think there could be another body within our State more capable of discussing this problem. All conditions throughout the State are known by it and it should therefore be best fitted to discuss the needs for the suppression of this, our common enemy—Tuberculosis.

INVESTIGATING TUBERCULOSIS.—The King of England evidently intends to find out as much about bovine and human tuberculosis as the science of the day can teach. He officially appointed a commission to inquire whether the disease in animals and man is one and the same; whether animals and man can be reciprocally infected with it; and under what conditions, if at all, the transmission of the disease from animals to man takes place, and what are the circumstances favorable or unfavorable under which transmission takes place. The members of the commission are Sir Michael Foster, Professor of Physiology at Cambridge University and a Fellow of the Royal Society; Dr. German Sims Woodhead, Professor of Pathology at Cambridge; Dr. Sidney Cox, Professor of Pathology at London University and another Fellow of the Royal Society; Dr. John McFadyean, Principal and Professor of Comparative Pathology and Bacteriology at the Royal Veterinary College, London; and Dr. Rupert William Boyce, Professor of Pathology at University College, Liverpool. To these men the English people think the investigation of the subject may safely be entrusted.—(*Breeder's Gazette.*)

BOSTON is to have a work-horse parade, and an association, composed of some of the best-known citizens, has been formed, and the exhibition will take place in the early part of September. The object of the association and its parade is to improve the condition and treatment of work horses by encouraging their owners and drivers to take pride in their appearance. Incidentally, also, it is hoped that the public generally will be led to feel an interest in the work horses of the community, for the parade will be held in some boulevard or other accessible place, and will, in fact, be an open-air horse show, free to all spectators. Prizes will be offered for horses used by the city, packing companies, coal dealers, truckmen, contractors, medicine and beverage dealers, ice companies, brewers, express companies, and special classes for horses used for hacks, herdics, delivery wagons, fire and police.

PEMPHIGUS FOLIACEUS, OR, BULLUS EXFOLIATIVE DERMATITIS IN THE HORSE.

By F. E. ANDERSON, V. S., FINDLAY, OHIO.

Read before the Ohio State Veterinary Medical Association, Jan. 14th, 1902.

About January 20, 1901, my attention was called to a 16-year-old chestnut-sorrel gelding, owned by J. H. Boger, Postmaster of Findlay, Ohio. A family horse in good condition up to the time of this affliction the day before.

The causes of which there is nothing certain known, so far as I can find in my limited research of the subject, and further that it is a disease extremely rare in our animals.

The symptoms presented were that of acute vesicular eruption of the skin extending from the ears to the shoulders. The hair bedewed with moisture and the skin very tender to the touch. During the day his neck dried up. Next morning the neck was fairly dripping with a cold perspiration and the vesicles had become confluent, forming ovoid bullæ, varying in size from two to ten inches in circumference and three-quarters of an inch thick, covering the entire neck and extending down over the breast between the front legs, which were swollen down to the knees, also the inferior surface of the abdomen, back to and including the sheath. The third day the hind limbs began to swell at the body and within a week the legs were swollen down to the feet.

The perspiring at night extended gradually from the neck to back of forelegs, then to the flank and, eventually, all over the body, followed soon with the bullæ, until it was impossible to put your finger on a spot that was not affected, hot and extremely sensitive to the touch. These bullæ were filled with a transparent amber liquid; in about twenty-four hours after they formed the liquid would escape and glue the hair together, forming a hard scab when dry, which would exfoliate in from one to two weeks, taking the epidermis and hair with them, leaving a shining red surface, which persisted for some days, when recovery would apparently take place, new hair come in at once, only

to be attacked as before, and by the time the desquamating process had followed the dermatosis all over the body, new bullæ were forming where the first disappeared and each recurring attack would be ushered in by chills and fever, until this process had repeated itself three times over the whole body and down the legs to the hoofs; no part of the integument escaping, even to the inside of the ears and false nostrils.

At times the only hair to be seen was in the mane, tail and the coarse hair at the fetlock, where the exfoliation was not so thick, but would soon come off through the hair in large paper-like scales. During the whole time he stood on his feet, and had a very fair appetite, except during the pyretic stages. From a fine looking, fat horse in January, he was reduced by the first of May to a mere skeleton with a denuded skin stretched over it. About May 1st the disease commenced to subside and the bullæ only appeared in spots along the back and neck, when the horse was turned on pasture, and by July 1st had ceased entirely, a nice smooth coat of hair covering the body, which was filling up with flesh, and began to look like a horse again.

About August 1st the horse was brought in and put to work, which he stood, and thrived up to about the last of October, when he was taken with chills and fever, ushering in another attack of the old trouble, which proceeded as before, and the sample of his last exfoliation I have here, which was taken from him Jan. 7, 1902, almost one year since the start of the disease, during which time he has lost four coats of hair completely, along with the epidermis. There was no affection of the mucous membrane at any time, which is mentioned in some cases by Kafosi, who says it takes many months or years for the process to occupy the whole body in man, while in this case it did its work in about 40 days.

Loiset, in Freidberger and Fröhner, describes an enzootic eruption appearing on the loins, croup and posterior members of the ox, characterized by ovoid bullæ filled with a transparent liquid, followed later by scabs, and the skin became desquamated, with rapid recovery.

Seaman recognized a similar eruption on the ox, which was accompanied by chills and fever.

Dieckerhoff observed a bullous dermatitis which was characterized by flat or slightly rounded vesicles, from the dimensions of a walnut to that of an inverted saucer, which were developed on the skin of the abdomen, head, neck, shoulders and thorax of five horses, with great itching, but he does not mention any exfoliation.

The cases described in the ox much resemble pemphigus vulgaris of man, a disease which is quite different from pemphigus foliaceus, which often causes death, as Kafosi estimates that 10 per cent. of the cases do not recover permanently.

The treatment I resorted to were many and varied, beginning with a purgative, followed by febrifuges and sedatives, until the fever subsided, then alteratives—hyposulphate soda, iron, quinine, arsenic; locally nitrate of mercury ointment, sol. alcohol and corrosive sublimate 1-5000, later 1 to 2000, with witch hazel (Epicarin 50 parts, alcohol 100 parts, and oil resini 10 parts), applied after baths of warm water, containing 1 oz. to the gallon of Minor's fluid, with German liquid soap, which did more good than anything I had done. As the weather got warm in the spring the improvement was noticeable, but slow, as it was a month after turning to pasture before the bullæ stopped forming entirely, during which time I went to the pasture several times and bathed the remaining affected spots with sol. corrosive sublimate.

When the affection returned with frost and cold weather I was ready to send the patient to the fertilizer works, but the owner would not agree to that, so the first thing I did was to clip the hair and give a purgative, which apparently improved the condition for a few days by reducing the swelling, etc., which returned in about two days. Then, as an experiment, on Nov. 11, 9.00 A. M., with a temperature of 103, pulse 70, I gave 3 iv. creolin hypodermically, full strength, in the neck. Nov. 12, 9.00 A. M., temperature 101, pulse 48; applied $\frac{1}{2}$ gal. Minor's fluid, full strength, all over the body, rubbed well in

and left for one hour, then washed off thoroughly with warm soft water, and kept horse in warm room until dry. At 3.00 P. M. gave him 3 iii. creolin hypodermically, on opposite side of neck. Nov. 13, 7.00 A. M., temperature $105\frac{1}{2}$, pulse 84; gave 3 i. fluid extract digitalis and repeated the dose at 12.30 P. M.

Nov. 14, 7:00 A. M., temperature 101 2-5, pulse 52.

" 15, " " " 101 2-5, " 48.

Swelling all gone from body and limbs and horse laying down, for the first time in two weeks, but a slight loss of appetite ; passed a large quantity of dark urine, which continued for over a week, during which time the liver became congested with yellowness of the mucous membrane and complete loss of appetite and an elevation of the pulse to 100, without any elevation of the temperature.

During which time I gave him 3 ounces of artificial Carlsbad salts per day in 3 doses and $\frac{1}{2}$ drachm fluid extract digitalis every other day. Nov. 24, temperature 101, pulse 48, water clearing up and yellowness of mucous membrane disappearing and a return of appetite with general improvement up to Dec. 6, when I sent him to the country with no bullous swellings of the skin, but a slight exfoliation of the epidermis in thin scales coming off through the hair. Did not see him again until Jan. 7th, when his entire coat of hair was loose from the body, just hanging on by an occasional hair, but much improved in flesh and general appearance and no sign as yet of vesicles forming ; whether they will or not is to be seen later.

"*APOPLECTIFORM SEPTICÆMIA IN CHICKENS*," a preliminary report on a highly fatal disease caused by a nonpyogenic streptococcus, by Victor A. Nørgaard, V. S. (Copenhagen), chief of the Pathological Division, B. A. I., and John R. Mohler, assistant chief, same division, has recently been issued by the Department of Agriculture. The small brochure is interleaved with beautiful colored plates, illustrating the appearance of the organs of diseased animals and the microscopical slides showing the streptococci and the tissues invaded by them.

"*EMERGENCY REPORT ON SURRA*," by D. E. Salmon and Ch. Wardell Stiles, has just been issued by the Bureau of Animal Industry. Secure a copy, as it is intensely interesting.

REPORTS OF CASES.

"Careful observation makes a skillful practitioner, but his skill dies with him. By recording his observations, he adds to the knowledge of his profession, and assists by his facts in building up the solid edifice of pathological science."

RUPTURE OF THE FLEXOR TENDONS AS A COMPLICATION OF AZOTURIA.*

By CHAS. W. BOYD, V. M. D., Pittsburg, Pa.

Rupture of the flexor tendons is usually of traumatic origin, and when we meet with such cases the direct cause is in the majority of instances known. However, we occasionally hear of cases which were not of traumatic cause, but as a sequel of some diseases which run a long course. I wish to submit to you a report of a case of rupture of the flexor tendons of both anterior limbs which has a peculiar history, and you may use your own judgment as to what the primary cause in this case was.

History.—A fine carriage horse, nine years, weight about 1000 pounds; had been standing in the stable for about ten days without exercise of any kind; after he had been driven about five miles fell on the street and was unable to rise; he was immediately removed to a stable in ambulance. We again made an effort to get him up, but did not succeed. The animal was apparently in a helpless condition. I made a careful examination and found all symptoms characteristic of azoturia, and I diagnosed it as such.

I prescribed the ordinary form of treatment and left him in charge of two attendants; when I called the following day, the animal was still down, but I was pleased to learn that he had been up twice during the night. With some assistance the animal succeeded in getting up and was able to stand with a little support on either side. I then found there was something wrong with the position of anterior limbs. They had a decided broken down appearance, with the ankles and heels resting on the ground, and toes turned up, exposing to view both soles. On examination of the tendons I found them to be ruptured about the lower third of the metacarpal bones. The rupture seemed to be complete in both, as a space between the torn ends of tendons was easily detected. I decided it was a hopeless case, so ordered the animal destroyed.

* Presented at the Annual Meeting of the Pennsylvania State Veterinary Medical Association, March 4 and 5, 1902.

The attendants did not notice any such deviation of the legs while he was up through the night, so the rupture must have occurred at the time of the last effort in getting up.

We know that azoturia causes degenerative lesions in the muscle fibres in the early part of the disease and statistics show that we sometimes have rupture of muscles or even groups of muscles. As a result of these degenerative changes and which occur in their struggles and their violent efforts to get upon their feet, and we sometimes meet with extension of the muscles and tendons in azoturia.

Lippold has observed a case of extensive extension of the posterior limbs. The ergots were touching the ground and toes turned up, showing symptoms similar to the case I report.

It is true that azoturia rarely involves the anterior limbs, but I sincerely believe that the case I report was one in which both anterior limbs were involved and that this disease was the primary cause of rupture, setting up degenerative lesions in the tendon fibres as well as the muscle fibres.

I submit this to you, hoping that it will be of some interest.

PHYTOLACCA POISON IN CATTLE.

By G. R. WHITE, D. V. S., Nashville, Tenn.

On May 20, the writer was called by telephone from Winchester, a small town, the county seat of Franklin county, Tennessee, situated 85 miles south of Nashville, at the foot of the Cumberland mountain range. The person at the other end of the phone informed me that five of his best young cattle, out of a herd of thirteen, were affected with some peculiar malady, which in his, as well as his neighbors' opinions, was a contagious disease of some character. I asked him to describe to me all noticeable symptoms, which he did as follows :

"Without any apparent cause, my cattle ceased eating four days ago, and are now in a bad fix. I have five sick ones out of a herd of thirteen. They were at first constipated, but are now passing much mucous, as well as blood, from the bowel. I also notice some shreds of intestine. They are lifeless, noses almost against the ground, ears flopped, eyes sunken, back arched, high fever, muzzle dry and hot, slight discharge from nose, almost constant straining in their endeavor to pass faeces from the rectum. They are very weak, and on this account

stagger and stumble whenever they attempt to walk. Complete loss of appetite and cessation of rumination."

I informed him that it would be impossible to make a diagnosis with any degree of certainty, unless he could arrange in some way for me to see the cattle, as well as the pasture upon which they had been grazing previous to the attack. He then ordered me to come at once and make an investigation. Upon my arrival I found the cattle suffering as he had described.

I pronounced the disease haemorrhagic enteritis accompanied by dysentery, and began at once to investigate the cause. I questioned the owner as to the character of food the cattle had been eating. He informed me that they had been running at grass for past few months, and to his personal knowledge had eaten nothing except what was obtained from the pasture, which was a 75-acre field with plenty of grass and clover of a good quality. We searched this pasture from end to end, but failed to find anything that in my opinion would produce the trouble with which his cattle were suffering. We gave up in despair the idea of locating the trouble, and were returning to the barn, when the owner, for some unexplainable reason, informed me that he had allowed the cattle to run for two days in a "winter oat patch," which had been cleared of timber the year before ("new ground"). We visited this "patch" and found thousands of phytolacca plants ("poke-stalk"). Hundreds of these plants had been eaten off even with the ground by the cattle, so my diagnosis was haemorrhagic enteritis accompanied by dysentery due to poison from eating phytolacca plants.

A CASE OF TETANUS IN A HORSE TREATED WITH SERUM.

By E. McGRAW, V. S., 187 S. Hoyne Ave., Chicago, Ill.

Jan. 12, 1902, 2.00 A. M.—First visit; mare about nine years old, weight about 1100 pounds, health excellent prior to receiving, a few days since, a punctured wound on the right hind leg, caused by a piece of dirty wood block. Animal very stiff, barely able to walk in a very stilted manner, tail elevated on a line with the back and rigid, jaws tightly set, muscles of jaws and neck rigidly drawn and standing out like ropes. Temperature 102° F. The wound was immediately cleansed and dressed with creolin. I administered hypodermatically 30 cc. veterinary anti-tetanic serum (P. D. & Co.)

Jan. 13, 9.00 A. M.—Temperature 101.5° F., muscles somewhat relaxed, very much improved, eating gruel fairly well. Repeated same dose of serum. Again cleansed and dressed the

wound with creolin. This same attention was given to the wound at each subsequent visit.

Jan. 14, 9.00 A. M.—Temperature 100.8° F., eating mash fairly well, muscles relaxed. Injected serum in same dose. 4.30 P. M.—Temperature and conditions same as morning. Administered same dose of serum.

Jan. 15, 9.00 A. M.—Temperature 100.2° F. Improving rapidly. Administered same dose of serum. 5.00 P. M.—Temperature 101.4° F. Gave same dose of serum.

Jan. 16, 9. A. M.—Temperature 102.2° F., not so well, more difficulty in eating. Gave 30 cc. serum. 5.00 P. M.—Temperature 100.8° F. Eats better, jaws again somewhat relaxed. Repeated same dose of serum.

Jan. 17, 9.00 A. M.—Temperature 100.2° F., very much better, eating oats and hay. Repeated serum in same dose. 5.00 P. M.—Temperature normal, greatly improved, eating well. No serum given.

Jan. 18, A. M.—Temperature 100.4° F., quiet and eating well. Gave 30 cc. of serum.

Jan. 19, 10.00 A. M.—Temperature 100.4° F., eating well, feels well, laid down and got up nicely for the first time since attack. Gave 30 cc. serum.

Jan. 20, 10.00 A. M.—Temperature 104.1° F., much worse, nervous, eyes bad, muscles much more rigid. Found that wound had suppurated in another place and was in bad condition. Cleansed wound thoroughly, administered 30 cc. of serum. 5.00 P. M.—Temperature 101.4° F., quiet, eating gruel again. Gave 30 cc. serum.

Jan. 21, 10.00 A. M.—Temperature 100.4° , very much better, standing on foot of injured limb, eating well. Gave same dose of serum.

Jan. 22, 10.00 A. M.—Temperature normal, greatly improved, wound dry and clean, eating well and quiet. Gave 30 cc. of serum.

Jan. 23, 10.00 A. M.—Temperature normal, continued improvement, walks well, eats well, seems to feel well in every way. Gave 30 cc. serum.

Jan. 24.—Temperature normal; on being led in to alley tried to jump, run and play. From this date on recovery was continuous and uneventful until Jan. 26th, when he was discharged cured and ready to work.

I consider the recovery remarkable on account of the severity of the attack, and I feel sure that had I continued the admin-

istration of the serum twice a day, on Jan. 17th and subsequent days, instead of only once a day, recovery would have been much more rapid and the bad conditions prevailing on the 20th and 21st would not have occurred. I am very much pleased with the result of the treatment, especially when taking into consideration the fact that the animal was under most unfavorable surroundings, in a damp and dirty stable, with fifteen other horses, and subjected to the annoyance of unusually loud and disturbing noises and movements. In spite of these unfavorable conditions the animal was well, and at work, in just two weeks from the time I was first called, and after receiving only sixteen bulbs, or 480 cc. of the serum.

The result, in this case, seems to me so satisfactory that I am encouraged to employ the same treatment in every case of tetanus that I may have.

RUPTURE OF THE OESOPHAGUS IN A COLT.

By A. W. BAKER, V. S., Brasher Falls, N. Y.

Reminded by the report in May REVIEW of Dr. T. S. Childs, of Saratoga Springs, upon a case of ruptured oesophagus, I am impelled to place a somewhat similar case on record.

The subject was a two-year-old colt, owned by a farmer in the town of Dickinson. Upon responding to the call, I found the patient with neck badly swollen, a large three-cornered wound discharging pus freely. From the fetid condition, I concluded that the wound had been inflicted at least two days previous. Upon examination of the fence surrounding the pasture, a sharp cedar stick was found covered with blood and hair. I dressed the wound on May 8th, putting in two stitches. Four days later the stitches gave away and he began to eat, but the food came out through the wound. I was called again on May 12th. The swelling had disappeared, and I found a hole large enough to insert two fingers, and the oesophagus ruptured. I passed a three-quarter-inch rubber tube into the mouth, and down the oesophagus to four inches below the rupture. I then made an incision down on to the oesophagus, running longitudinally four inches each side of the original wound. With the tube still in place, I next put eight sutures in the oesophagus with catgut. Finally sutured the muscles deeply, leaving skin wound open. Two quarts of gruel were given as a drench, through the tube, then removed the latter. The patient was muzzled to prevent him from eating, and the owner instructed.

to give, per rectum, six or eight ounces of oatmeal gruel every four hours for fourteen days. I saw him again the 26th. The wound looked healthy. Treatment had consisted of a neck bandage applied with creolin solution (teaspoonful to the pint). He was given carbolic acid in his drinking water, using a teaspoonful to a pint of boiling water, and about six ounces of that solution in three quarts of cold water, kept constantly within reach. My last visit was on May 31st. The wound was entirely healed and he was beginning to eat a little grass. I discharged the case as cured, and expect to castrate him as soon as practicable after his weakened condition.

PERITONEAL ABSCESS.*

By Dr. J. F. ROUB, D. V. S., Monroe, Wis.

The patient was a dark bay colt of the heavy draught breed, two years old, weighing about twelve hundred pounds if in good flesh. The owner lived eighteen miles from town, and, like a good many other framers, did not want to go to the expense of a visit, but informed me that the colt was getting very thin in flesh and had been running down for the last two months. At the owner's request I prepared a tonic powder for the colt. This was March 10.

I heard nothing more from the case until May 5, when the owner called at the office and reported that the colt was becoming more and more emaciated every day; yet the appetite was fairly good; the colt staggered when walking and appeared to be weak across the loins and the owner was inclined to think that he had a case of kidney trouble. The information that I could get from the owner was not sufficient to enable me to diagnose the case, and I so informed the owner, and he concluded to have me call and see the colt.

On the following day I drove out to the farm, and, to my surprise, found the colt a mere endo-skeleton. Examining my patient carefully I was not able to discover any diagnostic symptoms; pulse normal, temperature 102. I came to the conclusion that I had some constitutional trouble to contend with and decided to make a rectal examination, which gave me value received for my trouble. By manipulation I discovered what I thought to be two distinct tumors just anterior to the right anterior iliac spine. By using my left hand in the rectum and

* Presented to the Wisconsin Society of Veterinary Graduates, at Milwaukee, Sept. 10, 1901.

he right externally was enabled to make out their form quite distinctly. They were heart shaped, one above the other; the superior one was about a third the larger, and the walls seemed to be very dense and hard. At this point I informed the owner where the trouble was and that the treatment would be an operation, and that, considering the condition of the colt, the chances of recovery were not very encouraging.

Modus Operandi.—Not considering it necessary to cast the colt on account of its weak condition, I proceeded to operate standing. With the left hand in the rectum as a guide, I made an incision with a scalpel through the epidermis and passed a trocar into the abscess. On withdrawing the trocar there followed a thin, creamy foetid pus, at least two quarts. Next I tapped the second abscess in the same manner, and found about one quart of the same kind of pus. I next made an incision from the lower point of tapping upwards about four inches long; this gave me ample room to explore the abscesses, which proved to be multilocular cavities. I then washed the cavities out with a 5 per cent. solution of carbolic acid and left instructions to inject the tincture of iodine once daily.

I had no report from the case until July 8th, when the owner called at my office to inform me that the colt was gaining in flesh and doing nicely with the exception of a small fistulous opening at the lower part of the incision. At the request of the owner I made a second visit, and, after making a rectal exploration, found the walls of the abscesses much diminished in size. I cast the colt and made a free incision from the fistulous opening downward and cleansed the parts thoroughly, leaving instructions as before, to inject the tincture of iodine once daily. The colt then made a very rapid recovery and without a blemish.

DISEASED TESTICLE.

A. W. Baker, V. S., Brasher Falls, N. Y., reports that on May 5 he removed from a large four-year-old colt a left testicle weighing three pounds thirteen ounces. When incised there was contained in the centre two ounces of creamy pus. The right testicle had atrophied to the size of a butternut. The operator has practiced castration since 1863, averaging about three hundred per year, and says that nothing of this kind has ever come under his observation before. He asks whether any one else has met with such a case.

DEPARTMENT OF SURGERY.

BY L. A. AND E. MERILLAT,

Chicago Veterinary College, 2537-39 State Street, Chicago, Ill.

SURGERY OF THE EYE, EAR AND UPPER AIR PASSAGES.

(Continued.)

CANTHOPLASTIC OPERATIONS.—Operations upon the canthus of the eye of domestic animals are seldom used to improve their appearance, but are often indicated as a result of accidents. Dogs will injure their eyelids in the pursuit of game or in fights; cattle injure their eyelids in passing through thickets or thick underbrush during the summer months when flies are bad, and horses frequently lacerate them in runaways or during sickness when they become delirious. We will divide canthoplastastic operations as follows:

1. Tarsorrhaphy or blepharorrhaphy.
2. Canthotomy or blepharotomy.

1. *Tarsorrhaphy or Blepharorrhaphy* is a procedure by which the transverse diameter of the palpebral aperture is reduced. To accomplish this, the borders of the eyelids at either the inner or outer canthus are sutured together. If the abnormal aperture is congenital the external canthus is generally the one operated upon, but if the operation is indicated as a result of an accident either one may be involved.

The operation is a very simple one, especially when performed upon the external canthus. The instruments needed for the procedure are, a small scapel; a pair of small forceps; and a few needles, armed with sterilized silk.

Operation.—A small portion of the eyelid containing the eyelashes is removed from both eyelids, being careful not to remove the orifices of the Meibomian glands. When the required amount of eyelashes are removed as mentioned above, the sutures passed through the middle of the surgical wound resulting from the removal of eyelashes of upper and lower eyelids; the sutures should be so adjusted as to bring both surgical wounds in apposition. The eyelids must be immobilized by the applications of bandages and inflammation suppressed by cold applications.

Internal Blepharorrhaphy is a remedy or rather a surgical interference that is sometimes used to improve the evil effects of a paralyzed orbicularis muscle. By suturing the internal can-

thus, the muscle is shortened and the tonicity increased, which improves the palpebral fissure. Besides, the operation has been a successful procedure in the treatment of *epiphora*. The operation will not improve all cases, but those that are due to hypersecretion without obstruction of lachrymal duct, can be considered indication for the operation. The discharge of tears caused by obstruction of the duct leading from the eye is never benefited by this procedure. The operation is performed in the same manner as *external blepharorrhaphy*.

2. *Canthotomy*.—The preceding operations were intended to decrease the transverse diameter of the palpebral fissure, but as there are conditions which occasionally arise in the treatment of oculal diseases that require an enlargement of the fissure, we will also consider the operation indicated in this connection. The indication for such a procedure is either to relieve the eyeball of excessive pressure resulting from abnormal conditions of the eyelids caused by disease, whether acute or chronic, or to enable the surgeon to remove retrobulbar tumors of an enlarged eyeball. We can consider canthotomy as follows :

- (a) *Temporary Canthotomy*.
- (b) *Permanent Canthotomy*.

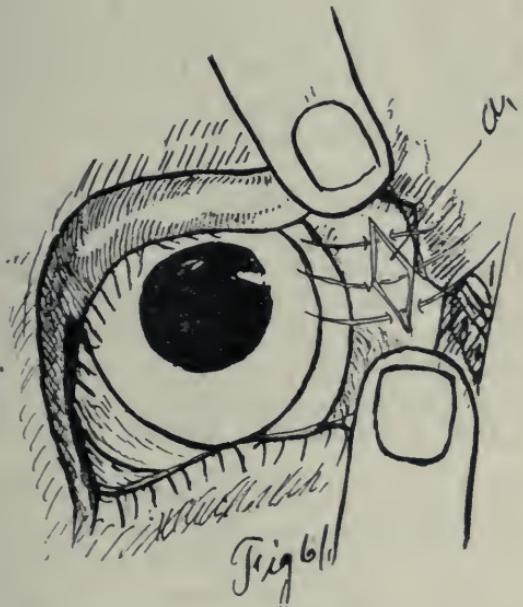
(a) *Temporary Canthotomy*.—When the enlargement of the space between the eyelids is only temporary the incision is made horizontally through the commissure and allowed to reunite with the surgical edges of the wound in apposition. The incision may be made with a straight blunt-pointed pair of scissors. In some instances the wound may be sutured ; however, in all cases the surgeon must determine whether the wound should be sutured or not. The after-care will depend upon the conditions which were considered indications for the operation. The most important feature in the after-care is to prevent infection.

(b) *Permanent Canthotomy*.—This operation is more tedious than the previous one. The object in permanent canthotomy is to make a permanent enlargement of the fissure, and for this reason the edges of the wound must not be allowed to reunite. This is accomplished by lining the wound edges with conjunctiva.

The instruments for the operation are: Pair of straight, blunt-pointed scissors, one or two pairs of artery forceps and three needles armed with silk.

Operation.—The first steps of this procedure are about the same as in the preceding one (*temporary canthotomy*). The

eyelids must be placed in such a position as to make the commissure stand out in the proper position (*which will vary in different animals*). The operator then passes the blunt-pointed scissors between the eyeball and the commissure as far as the incision is to be made and with one stroke the commissure is cut, making a horizontal incision. The haemorrhage must be arrested by pressure and tortion of arteries. It is sometimes very hard to control the haemorrhage, and as it is not advisable to use styptics that will destroy the tissues and retard primary union, we would recommend the use of warm or ice water for this purpose; extract of suprarenal capsules is a very good styptic.



When the haemorrhage is arrested the wound is changed to a vertical diamond-shaped wound by traction (Fig. 61-a); the conjunctiva is then loosened from the subconjunctival tissue and three stitches applied (Fig. 60-a) which should be removed in three or four days. The after-care is the same as in any other canthoplasty operation.

SURGICAL ITEMS.

Rupture of the Stomach in the Horse Without Flatulence.—A bay carriage horse that had been idle for several months and fed on small rations was suddenly put to hard work and fed accordingly. After eating a quantity of hay and six quarts of

oats, following a long drive, he was taken with colicky pains of a mild continuous type, which continued for twenty hours without abating. The pulse and temperature remained normal, while the respirations and countenance showed only a nominal amount of internal distress. At the end of twenty hours he suddenly showed symptoms of shock : rigors, profuse perspiration, coldness of the surface, accelerated respirations, and rapid, running down pulse. He died three hours later and a post-mortem revealed a rupture fourteen inches long at the greater curvature of the stomach, with the contents distributed through the peritoneal cavity.—(L.A.M.)

Habitual Luxation of the Patella.—Schumacher, of Milwaukee, reports a case of habitual luxation of the patella that was cured by dividing the internal straight ligament, first on one leg and two weeks later on the other. The operation has been performed by an Italian veterinarian, but never to our knowledge has it ever been undertaken in this country.—(L.A.M.)

DOG FOUNTAINS to the number of seventy are to be placed in the principal streets of New York City during the summer months. A fund has been created by private subscriptions, and the necessary municipal authority has been secured for carrying out the humane project. Mrs. Fiske, the actress, started the movement by contributing her check for \$100. The bowls will be attached to fire hydrants, and will be about six inches deep. It is probable that the fund will increase until every street has its fountain.

THE VALUE OF THE HORSE SHOW.—The Baltimore horse show, says the Baltimore *Sun*, was one which will never be forgotten. The excellence of the show did so much to educate horse owners that its results are bound to be lasting. The late show was the first and only one in Baltimore which has been self-sustaining. In those of previous years a deficit has been gracefully made good by public-spirited subscribers. Each year has witnessed an increase in the number of classes and a betterment of the quality of the horses, and the latest exhibition ranked with the best held in the United States. It was not equal to the New York show in some of the harness classes, but in some other classes it excelled New York. This is especially true of the roadster classes. Mr. J. Alexander Preston, who has judged or has been present at all the big shows held in late years in this country, said he had never seen better roadster classes anywhere.

EXTRACTS FROM EXCHANGES.

GERMAN REVIEW.

By ADOLPH EICHHORN, D. V. S., Bureau of Animal Industry, Milwaukee, Wis.

RECOVERIES FROM WOUNDS OF THE UTERUS [Dr. Vogel].—*Perforation of the Ventral Wall of the Uterus, in a Cow, followed by Recovery.*—After the extraction of a calf, which had a crooked leg, it was found that this leg, in delivering the foetus, pressed against the ventral wall of the uterus, perforating the same to such an extent that the whole hand could be passed through the opening. At that time nothing was done to the wound, and a grave prognosis was given to the owner, with the request to report on the following day in case the afterbirth should not be passed or the animal should develop alarming symptoms. Shortly after, however, the former was easily passed, and the animal remained in perfect health. How easily often severe wounds of the uterus in cows heal, without any treatment can also be seen from the following cases: *Tear of the Uterus, not Penetrating.*—While the author made efforts to replace a prolapsed uterus, through the carelessness of an attendant the organ was torn about 6 cm. in length, through the mucous membrane and the muscularis. The wound bled profusely. The tear with the surrounding part was ligated with a common string, the reposition completed and a supporting bandage applied. Recovery took place without any after treatment. *Large Fibroma of the Uterus, Operation, Recovery.*—One night the author was called to see a cow, the report of the owner being that the animal, after a recent difficult birth, became affected with a prolapsed uterus, of the size of a man's head, which he and the attendants were unable to replace. The examination revealed, instead of a prolapse of the uterus, a hard tumor of the size of a man's head, projecting from the vulva, which absolutely could not be replaced. As the author was not inclined to ride the long distance again on the following morning, he decided, somewhat thoughtlessly, to perform the bloody operation, in spite of the fact that the only instrument he had on hand was a simple, small bistoury. A round incision was made on the mucous membrane covering the tumor, and then the growth was resected, right after which the prolapsed vagina returned to normal position. An exploration per vaginum now

revealed the fact that the tumor was situated on the inferior part of the uterus, directly before the internal orifice of the same, and it is almost inconceivable how parturition of the well-developed foetus could have taken place, passing this immense obstruction. The weight of the growth was about eight pounds, and on section proved to be a very solid, tough fibroma. During and after the operation there were such profuse haemorrhages that the well-nourished, strong cow was unable to stand up from weakness, and therefore the author before departure recommended slaughtering of the animal, if indicated. But soon the haemorrhage ceased, and on the following day the animal could get up, after frequent administrations of good drinks, wine and bread, and recovered completely without any after treatment, so that she gave birth to several other healthy calves.—(*Berl. Thierarzt. Wochenschr.*)

A NEW TREATMENT FOR CARCINOMA [*Prof. F. Loeffler*].—Loeffler in studying the history of malaria, found in older medical publications communications recording cases of carcinomata, which healed spontaneously after an attack of malaria. He therefore proposes the treatment of carcinomas by a method of injecting the cancerous person with malarial blood, by which, as known, malaria can be produced artificially. This could be done without any hesitation, as, thanks to the investigations, especially those of Robert Koch, we are enabled to check an infection of malaria produced for therapeutic purposes with the aid of quinine as soon as alarming symptoms should make their appearance. Experimental treatment of carcinoma by injections of infectious organisms, as known, have been already repeatedly tried. Fehleisen, in cases of unoperable cancers, inoculated erysipel-cocci, and has obtained several good results; still these inoculations were dangerous, because there were no means by which the produced infection could be controlled. Further, the author calls attention to the fact that the principal territories of malaria are the tropical countries, and, as it appears, carcinoma in the tropics is of rare occurrence. Dr. Pagel, a friend to the author, who has practiced medicine for a number of years in North Borneo, could not recall a single case of carcinoma in the long time of his practice. Loeffler suggests the making of further observations in this direction, and particularly to determine by investigations, in what proportion does the frequency of cancers occur in malarial countries, in comparison to its frequency in districts not affected with malaria.—(*Deutsch. Med. Wochenschr.*)

CARBOL-SUBLIMATE SOLUTION.—Army Veterinarian Pantke found the following combination very beneficial in profusely discharging wounds and fistulæ : Hydrarg. bichlor. corrosiv., 1; acid carbolic, 30; aqua dist., 1000. The discharge soon ceased.

GAMGEE'S TINCTURE.—O. R. Knüppel applied this in the treatment of cartilagenous quittor and fistulous withers twice daily, whereupon, after four injections, the necrotic parts were washed out with warm baths. As known, the tincture consists of: Hydrarg. bichlor. corrosiv. 17, plumb. acetic, 34, spir., 136, acid muriat. 2. In cases of fistulous withers, the tracts were previous to its application freely opened.—(*Berl. Tierarzt. Wochenschr.*)

COMMENCEMENT EXERCISES.

NEW YORK-AMERICAN VETERINARY COLLEGE.

The annual commencement exercises of this school were held in conjunction with the School of Law, the University and Bellevue Hospital Medical College, the Graduate School, the School of Pedagogy, the School of Commerce, Accounts and Finance (all departments of New York University), on Thursday evening, June 5, at the Metropolitan Opera House. The exercises attending the closing of the University and the University College and School of Applied Sciences had been proceeding at University Heights since May 31. The Opera House was packed, and it was estimated that a thousand were unable to obtain entrance.

The following gentlemen passed satisfactory examinations before the faculty, and all those who had received the requisite counts before the Regents received the diploma of the College ; the remainder will be granted parchments when their preliminary counts are obtained : Oscar Barnett, Jr., Newark, N. J. ; Louis Janeway Belloff, New Brunswick, N. J. ; George A. Hazel, Brooklyn, N. Y. ; Robert Anderson McAuslin, Brooklyn, N. Y. ; Warren J. Palmer, New York City ; James Lee Shorey, V. S., Hoosick Falls, N. Y. ; James L. Wells, Good Ground, L. I., and Roland T. King, Brooklyn, N. Y. Dr. Joseph L. Serling, New York, who passed the faculty last year, and received the requisite counts since, was awarded his diploma.

Robert A. McAuslin passed the best general examination and received the Faculty Gold Medal.

Warren J. Palmer passed the second best general examina-

tion and was awarded the Alumni Prize of Standard Veterinary Works.

Dr. Palmer was also the recipient of the Practical Prize of a case of surgical instruments, for the best practical examination passed before a board of veterinarians appointed by the faculty.

CHICAGO VETERINARY COLLEGE.

The annual banquet given to the faculty and students by the trustees of the Chicago Veterinary College was held at the Sherman House, Chicago, March 13, 1902. Prof. A. H. Baker presided. Prof. L. A. Merillat acted as toastmaster, and the programme was very elaborate. Mr. W. F. Hoehner, senior student, responded to the toast of "The Future of the Profession;" Mr. E. L. Lewis, junior student, responded to the toast "Phases of College Life," and Mr. E. A. Rein, freshman, to the toast "Veterinary Education from the Standpoint of a Freshman." Musical numbers were furnished by the class quartette, Messrs. Hisgen, Parks, Perkins and Axby, consisting of songs, piano selections, etc. Numerous toasts were responded to by the different members of the faculty.

The 18th annual commencement exercises of the college were held at the College Auditorium on Friday afternoon, March 28. Numerous friends of the graduating class and the faculty were present. Prof. Joseph Hughes presided, and, addressing the class, stated that the session concluded was one of the most successful in the history of the college, the number of matriculates being 164. He said that in the class of this year, besides the students who have taken the complete course at this school, there were graduates and advanced students from six other colleges, and this naturally giving rise to more or less friendly competition proved a decided stimulus to the class as a whole in the pursuit of their studies. He congratulated them on their splendid attainments, whether judging them from their ordinary scholastic education or from the amount of technical veterinary knowledge which they possessed. Concluding, he expressed his admiration—an admiration shared by every member of the faculty—of the deportment and general conduct of the class during their attendance. On behalf of the trustees, he thanked the faculty for the highly efficient manner in which they conducted their various classes, directly contributing to the success of the session. He then announced the names of the gentlemen who successfully passed the final examinations as follows :

B. F. Barber, Glidden, Ia.; C. Baynes, Angers, France; J. W. Beckwith, Shullsburg, Wis.; R. J. W. Briggs, Garner, Ia.; W. W. Bronson, Wyoming, Ia.; J. W. Bunker, New Providence, Ia.; L. C. Butterfield, Marseilles, Ill.; F. W. Brewer, Indianapolis, Ind.; E. G. Cluts, Canton, Ill.; Chas. J. Dawdy, Greenville, Ill.; H. Devitt, Chicago, Ill.; L. L. Diller, Marshalltown, Ia.; C. E. Dornheim, Providence, R. I.; F. Eckert, Reeseville, Wis.; J. E. Frank, Hastings, Neb.; G. E. Frye, Ft. Wayne, Ind.; W. C. Giller, Roodhouse, Ill.; F. W. Godsall, Ottawa, Ill.; F. A. Goodbody, Chicago, Ill.; John P. Graff, New Ulm, Minn.; H. H. Glenn, Verona, Ill.; J. L. Halloran, Stapleton, N. Y.; J. H. Hanna, Burlington, Kas.; W. L. Hiatt, Erie, Kas.; N. W. Hillock, Columbus, O.; A. C. Howe, Des Moines, Ia.; W. F. Hoehner, Belleville, Ill.; J. K. Jameson, Paris, Ky.; E. C. Joss, Fairview, Kas.; G. A. Kay, Minden, Ia.; W. J. Kirk, Sharon, Pa.; Geo. W. Knorr, Louisville, Ky.; F. A. Laird, Springfield, Ill.; F. Lett, Jr., Paris Crossing, Ind.; W. H. Luther, Boonville, Ind.; R. C. Leu, Highland, Ill.; C. D. Maulfair, Magnolia, Ill.; R. Mazza, Petaluma, Cal.; A. F. Nelson, Jamestown, Ind.; R. E. Nesbitt, Maroa, Ill.; C. L. Passmore, Huntley, Ill.; P. J. Purcell, Bradford, Pa.; G. A. Rohde, Flint, Mich.; C. A. Richards, Victoria, B. C.; T. Schneekloth, Pepin, Wis.; F. K. Scott, Terre Haute, Ill.; C. O. Seaberg, Crystal Falls, Mich.; C. H. Spangler, Lockport, Ill.; M. A. Stewart, Richmond, Ind.; S. P. Talbott, Ames, Ia.; C. D. Tuttle, Canton, S. D.; F. H. Thompson, Woolley, Wash.; G. S. Thorp, Palestine, O.; C. O. Van Winkle, Salem, Ia.; C. A. Webber, Rochester, N. Y.; L. E. Warner, Aurora, Ill.

Of this number the following gentlemen graduated with honors: B. F. Barber, F. W. Brewer, W. L. Hiatt, E. C. Joss, W. J. Kirk, Geo. W. Knorr, W. H. Luther, A. F. Nelson, C. R. Richards, C. O. Van Winkle, L. E. Warner, C. H. Spangler, C. A. Webber.

Dr. Edward C. Joss, obtained the gold medal for the highest general average; Dr. C. R. Richards, the gold medal for the highest standing in equine theory and practice; Dr. Geo. W. Knorr, the gold medal for the highest standing in anatomy; Dr. C. O. Van Winkle received the gold medal for the highest standing in cattle pathology; Dr. C. R. Richards also received the prize for the best examination in surgery; Dr. E. C. Joss, prizes for the best examinations in meat inspection and helminthology; Dr. C. A. Webber, prize for the highest standing in pathology and bacteriology; Dr. W. H. Luther, the prize in

materia medica; Dr. C. H. Spangler, the prize in lameness; Dr. J. Frank, prize for highest average in physiology; Dr. T. A. Schneekloth, prize for the highest standing in hygiene; Dr. C. J. Dawdy, the prize for the highest average in chemistry.

The degree of Doctor of Comparative Medicine (M. D. C.) was then conferred on the class by Professor A. H. Baker and the diplomas distributed by Prof. E. L. Quitman.

Following the distribution of diplomas came the awarding of medals and prizes, after which the valedictory was delivered by Dr. J. H. Hanna and was heartily applauded.

Prof. A. H. Baker delivered the Doctorate, wishing the students god-speed and alluding to the fine prospects of the veterinary profession as evinced by the numberless requests from all parts of the country for veterinary surgeons, received during the past session, as well as by the large number of students that registered at the Chicago Veterinary College, and giving them advice and encouragement, and also impressing the fact on the graduating class to always consider every member of the faculty as their friend, and not to hesitate, whenever advice was necessary, to turn to their *alma mater*.

CORRESPONDENCE.

A PROPOSAL TO FORM AN ASSOCIATION OF EXAMINING BOARDS.

MAQUOKETA, IOWA, June 20, 1902.

Editors American Veterinary Review:

DEAR SIRS:—I write to inquire what has become of the Association of Veterinary Faculties and Examining Boards? Two years ago I attended the American Veterinary Medical Association at Detroit, hoping to have the pleasure of attending a session of the aforesaid organization advertised to hold a meeting at that time. While in Detroit several inquiries addressed to parties who ought to know concerning the above mentioned organization elicited no information whatever. No one seemed to know anything about it, and I took it for granted they cared less, and I came home with a feeling of disappointment, as I had hoped to obtain a great deal of information which would be of value to the Iowa State Board, who were struggling to perfect an organization at that time. I ask if it would not be proper for the members of the several State boards which now exist in the United States, to get together at Minneapolis at the

coming meeting of the A. M. V. A. and organize a new association of examining boards. There seems to be too much jealousy existing between the various colleges for complete harmony to exist in the Association of Veterinary Faculties and Examining Boards, hence the advisability of a new organization composed exclusively of examining boards. Should you think this subject of sufficient importance, I would be glad to have you make mention of it in the pages of the REVIEW.

Yours very respectfully, W. A. HECK,
Pres. Iowa State Board of Veterinary Medical Examiners.

THE PRODUCTION OF IODISM IN THE OX.

DENISON, IOWA, May 10, 1902.

Editors American Veterinary Review :

DEAR SIRS :—In the April REVIEW, on page 39, a question is asked regarding the length of time required to produce iodism with the quantity given. In reply will say that iodism was produced in Tenth Laird twice—the first time it took eight days and the second time six days before noticeable ; both times he received one drachm (3 i) twice daily in his water and was fed on ground oats and bran while under treatment.

If I am giving too much at a dose or the dose too often I would be glad to know it. I figure this way : here in this country of lots of corn, which contains so much starch, it is necessary to give big doses to produce results.

Yours truly, HAL. C. SIMPSON.

[NOTE.—The statement of our esteemed correspondent is quite extraordinary to us. While we have never given the iodide to bulls, we have given it in very much larger quantities and for longer periods to cows and horses, without ever having seen iodism manifested. For the reduction of scirrhus cord, four-drachm doses twice daily were administered to a trotting horse for a month, while cows which had suffered from parturient paresis were liberally dosed with it prior to a subsequent parturition. So that the note referred to by Dr. Simpson was called forth by the ease with which it had occurred in his experience.—EDITOR.]

DR. J. I. GIBSON HONORED.—At the annual meeting of the Iowa State Board of Health, May 14, the following preamble and resolutions was unanimously adopted : “Whereas, the services of our associate, Dr. J. I. Gibson, late State Veterinarian, as a member of this board have ended by expiration of his term, and whereas, we the members of the State Board of Health recognize in Dr. Gibson an able and conscientious member ; therefore, resolved, that we express to Dr. Gibson our appreciation of the valuable services he has rendered the State while a member of this board.”

SOCIETY MEETINGS.

AMERICAN VETERINARY MEDICAL ASSOCIATION.

Secretary Stewart notifies us that the programme for the Minneapolis meeting is nearing completion, and the following papers have been promised, with several more under consideration :

“The Veterinary Profession, Past, Present and Future,” by Prof. D. McEachran, Montreal, Quebec.

“External Ulcerative Ano-Vulvitis of Cattle,” by Dr. J. J. Repp, Ames, Iowa.

“So-called Contagious Ophthalmia of Cattle,” by Dr. T. D. Hinebauch, Fargo, North Dakota.

“Hospital Management of Dogs,” by Dr. Chas. E. Ellis, St. Louis, Mo.

“Serums and Serumtherapy,” by Dr. E. A. A. Grange, New York City.

“The Relationship of Veterinary Science to the Medical Profession,” by Dr. D. King Smith, Toronto, Ontario.

“Barrenness in Bovines,” by Dr. Chas. Schmitt, Dodgeville, Wis.

“Poisonous Stock Foods,” by Dr. N. S. Mayo, Manhattan, Kan.

“Malarial Fever in the Horse,” by Dr. F. Torrance, Winnipeg, Manitoba.

“Some Features of the Texas Fever Problem,” by Dr. W. C. Rayen, Nashville, Tenn.

Titles of papers by the following members have not been ascertained ; Drs. Leonard Pearson, Philadelphia, Pa. ; S. D. Brimshall, St. Paul, Minn. ; J. S. Anderson, Seward, Neb. ; W. L. Williams, Ithaca, N. Y. ; M. E. Knowles, Helena, Mont. ; C. A. Carey, Auburn, Ala. ; M. Jacob, Knoxville, Tenn. ; C. H. Howard, Calumet, Mich. ; W. Horace Hoskins, Philadelphia, Pa. and R. P. Lyman, Hartford, Conn.

The West Hotel has been selected as headquarters, and the meetings of the association will be held in the assembly hall of the hotel. The local committee have secured rates from a number of hotels and private boarding houses near to the headquarters, and a list of these with addresses will be sent to all the members that they may arrange for quarters prior to the meeting. The fact that the Minnesota State Fair will be in

progress at that time will make it necessary to engage apartments before arrival in order to make sure of them.

The railroads have granted a $1\frac{1}{3}$ fare transportation on the certificate plan. Those living within the concessions of the State Fair may secure a better rate.

The local committee of arrangements are planning many special features for the entertainment of all who come, and more especially the ladies. The numerous beautiful lakes and pleasure resorts in close proximity to the twin cities of the north offer many attractions, and particularly among these is Lake Minatonka, upon the shores of which it is proposed to hold the banquet, in which it is hoped that the ladies will have a part.

The new building for the veterinary department of the State University has been completed, and in this building there is a clinic room with an amphitheatre, and arrangements are about completed for a series of demonstrations of surgical procedures at the clinic to be held after the close of the meeting, full details of which will be given in the August REVIEW.

The Chicago, Milwaukee & St. Paul Railway will probably carry most of the veterinarians from Chicago to Minneapolis. In the June REVIEW Dr. A. H. Baker announced that he and Dr. Hughes were perfecting arrangements with the management of this splendid road to furnish special sleepers, and, should the number be sufficiently large, a special train, from Chicago on the night before the convention. Most of those attending will pass through Chicago, and it would make the journey very pleasant if a large party were to be made up there. This road has been actively seeking the patronage of the members, and they guarantee the best accommodations and courteous treatment. See the announcement in the advertising department.

PENNSYLVANIA STATE VETERINARY MEDICAL ASSOCIATION.

In the June REVIEW the full minutes, President's address and much other important matter which transpired at the annual meeting in March was published. This is here supplemented by the full reports of the most important committees, and will be completed in the August number.

REPORT OF COMMITTEE ON INTELLIGENCE AND EDUCATION.

By JACOB HELMER, D. V. S., Chairman Com., Scranton, Pa.

A few years ago in this country, instruction in the scientific

practice of veterinary medicine was a nexception in the literature to which the English reading and speaking veterinarian had access. Only a few valuable English works were on the market. Yesterday a professional library in the office of a veterinarian was a curiosity ; to-day the practitioner who does not possess one is liable to the charge of being non-progressive. Without a library for reading and reference it is impossible to keep abreast with the educational advancement around us.

The fact that new books continue to appear, shows that there must be an increasing demand, and the more we become a professional body of readers, the more and better literature will be placed at our disposal to read.

Among the more recent additions we find :

Outlines of Clinical Diagnostics of the Internal Diseases of Domestic Animals, by Prof. Dr. Bernard Malkmus, of Hanover, Germany, translated by Drs. White and Fisher; Diseases of Poultry, by Dr. D. E. Salmon, Chief of the Bureau of Animal Industry ; The Sheep, by Dr. Wm. A. Rushworth ; Anatomy of the Cat, an introduction to mammalian anatomy, by Professors J. Reighart and H. S. Jennings, of the University of Michigan ; The Diseases of the Cat, by J. Woodroffe Hill ; Shields' The American Book of the Dog, edited by G. O. Shields, Coquina Editor of Recreation ; Veterinary Materia Medica and Therapeutics, by Kenelm Winslow, of Harvard University ; Compendium of Bacteriology and Blood Serum Therapy, by Prof. Paul Jess, Charlottenberg, Germany, translated by Prof. Paul Fisher, of the Veterinary Department, Ohio State University ; Text Book of Ophthalmology for Veterinarians, by Prof. Moeller, of Berlin, translated by Prof. Paul Fisher ; Lameness in Horses by Prof. Jos. Hughes, of the Chicago Veterinary College ; Bovine Obstetrics, by M. G. Debruin, Instructor of Obstetrics at the State Veterinary School, Utrecht, translated by Dr. W. E. A. Wyman ; Synopsis of Prof. Quitman's lectures on Veterinary Materia Medica in Chicago Veterinary College ; Synopsis of Prof. Baker's Lectures on Theory and Practice of Veterinary Medicine and Surgery, in Chicago Veterinary College ; Clinical Veterinary Medicine and Surgery, by Prof. P. J. Cadiot, Alfort Veterinary School, France, translated by John A. W. Dollar ; Manual of Veterinary Microbiology, translated and edited by Dr. R. R. Dinwiddie, of the Arkansas State University, Agricultural College and Experiment Station ; Guide to Practical Meat Inspection, by Dr. F. Fishchoeder, Germany, translated by Dr. A. T. Peters, Investigator of Animal Diseases, United

States Experiment Station, University of Nebraska; Methods of the Examination of Milk, compiled by Dr. Paul Sommerfield, of Berlin, translated by Dr. A. T. Peters and R. S. Hiltner, A. M., of the University of Nebraska. A few of the older standard works on milk inspection are:

Analysis of Milk and Milk Products, Leffman & Beam, published by Blakiston, Son & Co., 1012 Walnut St., Phila., Pa.; Outlines of Dairy Bacteriology, by H. L. Russel, sold by the author, address Madison, Wisconsin; The Chemistry of Dairying, by Harry Snyder, Chemical Publishing Co., Easton, Pa.; Testing Milk and its Products, by Farrington & Wall, Mandota Book Co., Madison, Wisconsin; A valuable pamphlet entitled The Newer Remedies, by Koblentz, published in New York; Special Surgery of the Upper Air Passages of the Horse, by Prof. A. L. Merillat, of the McKillip Veterinary College, Chicago; A new work on Veterinary Medicine, in four volumes, by Prof. Jas. Law, Veterinary Dep't, Cornell University.

The valuable catalogues of standard veterinary publications sent free by Wm. R. Jenkins, 851 and 853 Sixth Ave., New York, and the Eger Supply House, 34 East Van Buren St., Chicago, Ill., should be in the hands of every veterinarian in the United States.

But whether a practitioner considers he can or cannot afford all the standard works, he should at least avail himself of the veterinary journals published here. A foreign journal would also be good, as well as a professional periodical on human medicine and surgery.

We should not forget that our American veterinary journals are what we, as a profession, make them. No editor alone can keep a magazine afloat, besides its intrinsic value will always largely depend upon the coöperation of the profession with its brains and patronage.

In July, 1901, both the scientific and lay world were surprised and shocked by Dr. Koch's announcement at the British Tuberculosis Congress, in substance, that the human family is practically immune to bovine tuberculosis. Should Dr. Koch's conclusions prove true, said fact will not obviate the necessity of inspection of animals and their products, and the control work now so rapidly developing in this country. An owner will always desire to weed from his herd any insidious and fatal malady and avoid its re-introduction. Consumers of meat and milk will want only pure and wholesome products. In Germany, where it is the national custom to boil the milk and thoroughly

cook the meat, there is no apprehension of disease or uncleanliness. But this prevailing custom there did not prevent tuberculosis from ravaging the herds of Germany, until that government was compelled to inaugurate sanitary measures for the control of the spread of the disease.

Because his name is so intimately associated with our knowledge of the subject of tuberculosis, Dr. Koch was the one to raise the question of that most desirable condition "Immunity of the Human Family to the Bovine Diseases." That there is a reasonable chance for such a question, there can be no doubt, and in asking it Dr. Koch was honest. It is fortunate, however, that the idea was introduced at the Tuberculosis Congress, because that body challenged Dr. Koch's self-assured position, thus lessening the disintegrating influence upon sanitary work of his practically unsupported conclusions.

It is a credit to the State of Pennsylvania, and a fact of which we should be proud, that our State Live Stock Sanitary Board, with its laboratory for original research, had anticipated the experimental work of Dr. Koch by several years, which results are diametrically opposed to those propounded by Dr. Koch. (See Ravenal's report to the Tuberculosis Congress.) Still more recently Dr. Ravenal, speaking of the subject, said as follows: "We have, in the laboratory, had evidence absolutely confirmatory of our former position. We have just published the fourth case of Infection of Man by Bovine Bacillus. On the other hand, we have obtained a culture of the tubercle bacillus from the mesenteric gland of a child, which is extremely virulent for cattle; proving either that the human bacillus has, at times, a virulence for cattle equal to the bovine, or else that the child in question was infected in the first case by the bovine organism. We have had four calves die from inoculation with the human bacillus, and now have a grown animal at the point of death."

During 1900 Drs. Brimhall and Wilson, of the Minnesota State Board of Health, issued a complete and interesting report on a highly contagious and infectious disease of cattle, which it had been their privilege to investigate during the summer.

According to the report, ecchymotic spots and haemorrhagic areas were found in nearly all the organs and tissues of the body. Lesions were practically limited to haemorrhagic phenomena. Bacteriological investigation of morbid material resulted in the isolation of the bacillus identified as belonging to the haemorrhagic septicæmia group, of which chicken cholera,

rabbit septicæmia and swine plague, are members. An infectious disease among wild animals and oxen in Germany has been described and identified as also belonging to the same group.

It appears that Dr. Brimhall and Dr. Wilson were the first in this country to isolate a pathogenic organism from a disease in cattle, which organism resembles, and was classified with those producing the hæmorrhagic septicæmia group of disease described by German writers.

During the last few years there has appeared in Pennsylvania, chiefly in Carbon and Wayne Counties, a disease analogous to that described by Drs. Brimhall and Wilson, of Minnesota.

Descriptions of the symptoms, progress and termination of the disease, as well as the post-mortem findings, are practically the same in the two places. Thus far the bacteriological work on the disease in this State has been futile, as far as the discovery of the bacillus of Loeffler and Schutz, or any other pathogenic organism is concerned. Further, all attempts at direct experimental inoculation from one member of the bovine family to another have failed. The disease appears to be neither contagious nor infectious. It ceases to spread in a few days after the herd has been placed in a field other than that in which the malady originally appeared. Hence it appears to be caused and spread by contaminated food only. The problem has not yet been solved in Pennsylvania.

We are pleased to note the claim made by Copeman, of England, that he has isolated the germ of dog distemper, and has succeeded in producing a vaccine virus which will give immunity to dogs. Prior investigators have made similar claims, and highly vaunted vaccines have been placed upon the market, but as yet we are without the real thing, therefore, let us hope that Copeman has furnished us with an effective means of prevention of the dreadful scourge known as dog distemper. The other most important advances in the bacteriological field during the last year have been in the study of the specific reactions of the blood of different animals. Behring, in Germany, has announced his ability to immunize cattle against tuberculosis. Leclainche, in France, has received a prize from the Academy for the production of a curative and immunizing serum against hog cholera. (Most probably our swine plague). 30,000 animals have been treated with results ahead of those obtained by diphtheritic serum in human beings.

The recently issued bulletin, No. 79, on rabies, by Dr. Ravel-
nal, is a most valuable contribution to our literature on this
disease. The bulletin excels in that it describes and illustrates
the method of diagnosing rabies by means of a microscopic ex-
amination of the cervical glands.

By this method a diagnosis can be made in from six to
thirty-six hours. The idea originated in Europe, but our State
Live Stock Sanitary Board was the first to develop and intro-
duce it in this country. When we reflect that the old method,
by inoculation, required several days, and the diagnosis was not
more certain, the importance and advantage of the one-day
method must be appreciated.

Much research and experimental work has been continued
in the laboratory of the State Live Stock Sanitary Board during
the past year. The work is of exceeding economic value to the
State. It deals with the contagious and infectious diseases of
our domestic animals, furnishes sure means of diagnosis, upon
which depends rational treatment and prospective eradication of
disease. Its work fosters health and protects the lives of the
people. Its problems require exact solution, and each result is
a stepping stone in the growth and progress of the profession.
Recent experiments have been conducted there to demonstrate
the varying susceptibility of animals to inoculation tuberculosis,
and establish the identity of the disease in human and bovine
subjects. Again, by what means the disease is extended in
stalled herds, and the conditions most favorable to rapid expan-
sion. The value of sanitation to cure the malady in the incipient
stage, and to retard its progress in the more advanced
stages. The influence of unsanitary conditions and surround-
ings upon the spread of the malady in the herd and upon the
progress of the disease in victims under unfavorable conditions.
The comparative value of curative measures. The development
of points in diagnosis and how the tubercle bacillus may enter
the milk. Practical sanitary measures for the repression of
tuberculosis on a large scale as in this State, not only tubercu-
losis, but anthrax, black leg and other contagious and infectious
maladies, against which it aims to fortify farmers free of charge.
It has devised a practical method for the treatment and eradica-
tion of contagious abortion in herds. Tested the value of vari-
ous disinfectants used in destroying the morbid products and
virus of disease. It has demonstrated that the cattle in this
country may and do suffer from a lung trouble resembling
pleuro-pneumonia, but caused by a fungus growth in the lungs,

the *aspergillus fumigatus*. It is now at work upon a hitherto unrecognized and fatal malady among cattle in this State resembling anthrax, but which disease does not appear to be contagious. The work of the laboratory is increasing each year in the number of problems presented, the demands of the farmers and the morbid material sent by veterinarians and others for examination and diagnosis.

When we reflect upon these things, we know that the veterinary profession in this State would practically be at sea without such a laboratory. It would be groping in the darkness on scientific problems for want of a search-light, which also prevents retrogression. The laboratory is a school to each intelligent and progressive veterinarian. It means a place for him to send specimens, report the cases of difficult diagnosis and receive instructions free of charge. It is open daily for his use.

But in addition to the work of the character mentioned, the laboratory is self-sustaining. It has manufactured for use in the State more than enough tuberculin, vaccines and mallein to defray the cost of its maintenance. Its products, for free distribution, if purchased in the market, would cost the State more than annually the whole expense of the laboratory and the research work done there. The laboratory is supported by a special appropriation from the State. Originally the amount was \$12,000 for two years; in 1900 the appropriation was cut to \$8000 for two years; last year we asked for \$6000 a year and were granted \$5000. Now, suppose that the State grants us \$5000 a year for the support of the laboratory, and the latter furnishes products to the amount of more than \$5000, what has the laboratory cost the State? Again, consider the value of the original discoveries made, and the knowledge imparted. But the original object of the State in creating the laboratory was to protect her extensive live stock interests, which are estimated to suffer six million dollars annually from preventable causes. In the light of this comparison, what does not the State owe the laboratory? Instead of \$5000 it would pay the State of Pennsylvania to appropriate for this laboratory \$50,000 for its use and expansion, to meet the ever growing need of such work. We feel sure that were this subject properly presented, and if the majority of our legislators could be brought to understand the matter thoroughly, ample funds would be provided. As it is, we do not complain, but it would seem necessary that more money be forthcoming in the future in order to meet the ever-

increasing demand upon the laboratory for scientific work. If each veterinarian would educationally influence his legislative members, and induce friends to do so, we could have for our laboratory all we need and want. Just in proportion to the degree of unity and harmony in our ranks will our efforts be characterized by strength and rewarded with success.

The question of what effect mechanical inventions, tending to displace the horse, will have upon the future of the veterinary profession, is one which has caused deep interest and concern everywhere, but especially to the practicing veterinarian. Common sense teaches us that the effort to do the world's work with machinery is not spasmodic nor unreasonable. The automobile in its present crude and unsatisfactory form is yet perfect enough to guarantee its permanency. Instead of the so-called fad disappearing, it will continue to increase, and each season will bring forth better machines for less money, and more of them.

No one will deny the fact that the vast majority, if not all veterinary students, enter the profession because they think there is money in it, because the profession is not crowded, and that it will afford them a better livelihood than anything else at hand. If, later in life, a few find that they were adapted to the requirements of the profession, it comes to them as a surprise.

As in all professions, the young veterinarian longs for a city practice, which, in many instances, proves an alluring pitfall. Undoubtedly the cities afford more lucrative practices, because cities contain many horses in a small area, because there is something to do ; besides there is money with which people are willing to part in order to have their animals properly cared for.

To veterinarians outside of cities the automobile question has little interest. There will be always as much veterinary work to be done in the country as now. The question will not effect men who fit themselves for state and government employ and receive a salary. The city veterinarian is the only one who will be injured by the successful advent of the automobile for semi and heavy draft purposes.

There can be no longer any question about the application of sufficient power to road vehicles for all purposes. The machines develop sufficient power to climb the highest mountains ; then, again, the power cost is merely nominal, a few cents a day. In successful business it is necessary to reduce expenses. If a machine can be utilized that is cheaper than a horse, the latter will

disappear. Machinery has in the past displaced many kinds of hand work and thrown thousands out of employment. Labor-saving machinery has been a potent agent in the production of hard times.

There is no more sentiment about the use of horses than about the use of man. The moment the horse cannot compete with the machine, out he goes. These are facts for the young veterinarian, now on the first round of his professional ladder, to contemplate.

If, to-day, you should step into France, the birthplace and home of the automobile, you would find their manufacture a booning industry. Exhibition upon exhibition is the thing of the day, and, without doubt, the demand will increase. Thus far the application has been limited practically to small and fancy vehicles for pleasure. Light draft vehicles have not been produced in anything like the same proportion, and but few heavy draft machines are seen. Hence we see that the automobile is very popular in France. Its application to semi and heavy draft purposes there is only a question of time.

But in his struggle for survival against the automobile, the horse has a few factors in his favor. The machine, in its present form, must have smooth and dry roads, macadamized roads or their equivalent, the year round. Most machines are so constructed that during cold weather heat is rapidly abstracted from the exposed generators. Hence the machine suffers or burns from the increased amount of combustion necessary to supply sufficient power. The automobile, in its present form, is better adapted to a warm than a cold section, to a dry than a wet locality, to a level than a hilly country. The question of its utility at the present time is one of locality. The horse is adapted to the world ; and but few conditions are fatal to him.

The great problem with the inventor is not how to make a machine go, but how to protect it from the disintegrating influences contingent upon bringing it into use to meet all the requirements under unfavorable conditions at the least possible cost. If automobiles could be run on rails, the inventor's dream would be speedily realized. But, is not this realization far off ? One by one we see the large automobile concerns, for heavy draft machines in our large cities, going to the wall. On the other hand, the wagon and carriage business is prosperous, and while wagon materials of all kinds are much higher than a few years ago, nearly all manufacturers report a greatly increased trade. The automobile has not thus far displaced the

horse for any purpose, because people who have means to purchase machines cannot afford to try to get along without horses.

Concerning matters of legislation, Stile's Bill No. 51, introduced in the legislature last Spring, was a surprise of no little importance to the veterinary profession in Pennsylvania.

The bill provided for the re-opening of the veterinary registry lists throughout the counties of the State for one year, on the ground that there were still men unregistered who were legally entitled to register under the old law, and who, for one reason or another, had never taken advantage of the opportunity.

The defeat of this obnoxious bill was just and serves to show what may be accomplished by united effort. But while we did exceptionally well and have reason to congratulate ourselves, yet there is reason to believe that we might have done better. Had we contended not for the defeat of this bill, but for its amendment only, and had been successful, it would have had the effect of breaking the decision of Judge Schuyler, of Easton, viz.: That you cannot limit the time of registration of one who is legally entitled to register. At the same time the Board of Examiners could have had accorded it the power to examine the credentials of those who might present themselves as legally entitled to register according to the decision. It follows that those not able to prove their claim could no longer find protection under the decision, which, by such a method, would have been rendered imperative. Having lost the opportunity afforded last Spring, it now behoves the Board to evolve some other plan. As it stands, Judge Schuyler's decision is right and just. It is a strong decision, and one that cannot easily be broken. There is an old saying, "If you cannot stem the tide, float gracefully with the stream." Obey the decision, make provisions for such old men as can show they were legally entitled to register under the law. Thus Judge Schuyler's decision may prove a help instead of an obstacle, a hint to clear the field for proper and successful action.

Another interesting bill, last Spring, passed both houses of the legislature, and received the signature of the Governor. This ingenious piece of legislation aims to secure a pure and wholesome milk supply for cities of the second class only. In such cities it provides that the sale of milk shall be contingent upon the possession, by the seller, of a proper license, issued by the Department of Health through councils. The bill empow-

ers councils to enact legislation requiring all herds that furnish milk to the city to be properly inspected by a veterinarian. It provides both for a physical examination and the tuberculin test. The bill covers the ground of complete inspection at the fountain head, the dairy. It has a few faults, but contains all that is necessary. It is a workable bill, not being too heavy or rigidly exacting. It is to be regretted that the bill does not become the organic law of the entire State. It served also as a good illustration of what can be done to secure legislation when those desiring it do not ask for the earth.

It is gratifying and portentous that such a widespread interest prevails in the matter of good roads; at least the work is growing along educational lines.

At the International Good Roads Congress, held in Buffalo in Sept., 1901, some very valuable papers were read by representatives from a number of the States.

The Committee of the 3d Annual State Good Roads Association, which met recently in Albany, reported the following among the recommendations for legislation:

1st. That the State be asked to appropriate one million dollars this year for good roads.

2d. That improved highways be maintained by the State, the expense to be proportioned between the State, the county and the town.

3d. That a wide tire law be enacted.

5th. That a change from the labor to the money system of repairing highways be made compulsory.

The problem of good roads in this country appears to be a most difficult one to solve. All things considered, country roads are but little better in Pennsylvania than they were twenty-five years ago. The labor system, still in vogue, of farmers working out road taxes, has been an expensive failure for lack of intelligent road building and sufficient funds with which to build them. No money, no roads.

The idea of the Pennsylvania farmers, expressed through the great organization known as the State Grange, is that a special tax should be levied on all personal and corporate property, and the amount used with that now derived from the taxation of real estate, for maintaining and building our roads. Not only that, but personal and corporate property should be taxed for road purposes equal with real estate, mill for mill.

Thus it will be seen how far two great States differ in their ideas of the solution of the good roads problem.

As far as any considerable results can be apprehended from present methods to obtain them, good roads in the United States, such as may be found in continental Europe, are a Utopian dream. Good roads are not of merely local benefit, but are a necessity to the nation which depends upon them, among other things, for its proper expansion. But unavoidable inter-state obstacles interdict the logic of depending upon the States for the acquisition of good roads for the nation. But these and other obstacles will disappear when the United States Government assumes the responsibility of building and maintaining our public highways. In the meantime, let us labor to assist any movement which contemplates the improvement of our roads.

The State Board of Veterinary Medical Examiners during 1901 examined twenty-one candidates for a license of the State and granted twenty licenses. All graduates must come before the Board. Notices are sent to every graduate from every school in the United States and Canada, where the same are registered from Pennsylvania. Twice each year a letter is sent to each of the sixty-eight Prothonotaries in Pennsylvania. The letter reads as follows:

Prothonotary:

DEAR SIR:—In enclosing you a pamphlet copy of the several laws of this State regulating the practice of Veterinary Science in this Commonwealth, I desire to call your attention to several points upon which prothonotaries have erred and which they have had to appeal to the courts for orders to correct the same on their registers.

1st. All graduates of veterinary colleges as stipulated in Section 1 of the Act of April 11, 1889, were given the privilege of registering as such until the first Monday in September, 1895, as provided for in Section 9 of the Act of May 16, 1895. After the first Monday in September, 1895, no registrations were admissible save on presentation of a license from this Board.

2d. All non-graduates or those not possessing a diploma as provided for in Section 2 of the Act of April 11, 1889, were afforded six months, within which they were to make such registration as an "existing practitioner." This period ended October 11, 1889, after which all such registrations were illegal until the passage of the amendment to the law of 1889, on April 29, 1891, when a second period of time was afforded non-graduates or until January 1, 1892, after which time all registrations of non-graduates were illegal.

Will you kindly examine your registry and note that all registrations comply with these requirements? Further, that there is no other registration required beyond the one in the county of original registration, or in other words, one registration covers the entire State.

Again, that no further registrations can be made in this State save on presentation of a license of this Board with the State seal attached.

Taking this will receive your careful attention and that you will report at once any irregularities on your registry that this Board may take the necessary steps to correct the same, I am,

Very truly yours,

SECRETARY.

During 1901 there were twenty-two alleged violations of the law investigated by the Board, with three additional ones for 1902 to date. Cases were successfully prosecuted in Schuylkill and Bedford counties. The Secretary of the Board has made two trips to York and Columbia to institute proceedings. The case in York is on the list for the April term of court. The one in Columbia has been temporarily postponed in order to secure more evidence. The Board has had names stricken from the registry by order of the court in several counties where the same has been allowed to be improperly placed there by the prothonotaries. All records of the Board are carefully filed and retained in the office of the Secretary, and a detailed record is kept of every violation of the law. The profession is better protected in the State than it ever has been, and the law grows stronger each year.

Without the work of the Board, all laws for the protection of the profession in this State instead of being enforced would be a dead letter. As a result the profession would be in the same position that it occupied previous to the enactment of protective legislation. Thus all illegitimate registrations have been prevented by the influence of the Board upon the prothonotaries of the State, and scores of illegal practitioners have been driven from the field through correspondence. Protection by laws, properly enforced, of a profession like ours, does more to dignify it in the eyes of the people than any other influence. Even the dignity derived from the professional education will not compare with it, where the right to practice is not made exclusive.

Along educational lines the work of State Examiners' Boards is no less important. Under their influence college cur-

riculums are altered and improved courses of study lengthened, higher standing for graduation required, besides an efficient barrier is erected against the propagation of cheap schools.

In Pennsylvania the Board means protection to the interests and also gives elevation to the character of the profession. Therefore the integrity of the Board should be zealously guarded to the end that its personnel shall be the best adapted to the purpose.

In closing this subject, would it not be a proper mark of our esteem and appreciation, for this association to frame a resolution thanking Governor Stone for his action in reappointing, against political influences, an original, also a continuous member, now the worthy and competent Secretary of the Board, Dr. W. Horace Hoskins?

I would suggest, for the consideration of this association, the feasibility of having two new committees. A standing committee of three members to be known as the Committee of Membership. The duty of such a committee would be, first, to obtain the name of every worthy and eligible practicing veterinarian in the State. Second, to open correspondence with those not already members, with a view of bringing them into this association, and to render a report at each annual meeting, showing the extent of the work, and what has been accomplished during the year, and all the facts that may be accumulated as a result of the correspondence.

The other committee would be devoted to building up the idea of securing unity and harmony of the profession in Pennsylvania. This committee would not act in reference to members alone, but aim to reach every worthy veterinarian in the State, in order to secure his influence in favor of measures of importance to veterinarians as a professional body.

It is interesting to contemplate that the present year bids fair to excel the past one in the prosperity of the profession's interests. The work of the Bureau of Animal Industry for 1901 shows expansion in almost every direction. It shows that our markets in Europe, in the future, will depend upon the freedom of our herds from disease. That there has at no previous time been greater danger from imported contagion than now. The present number of quarantine stations are insufficient to afford adequate protection, owing to increased business. The number of cattle and sheep exported has increased over other years. We need no longer to import fine grades of cattle, but should introduce our fine breeding animals to foreign stockmen. Prospects

for export trade to foreign countries are excellent, but the supply of good stock is scarcely large enough to supply the home demand. The number of cities where meat inspection is conducted has been increased by 13 per cent. during the year, and the number of carcasses inspected at the time of slaughter by 2,300,000. That there have been a large number of promotions of veterinarians in the Bureau of Animal Industry, and that there is an increased demand for additional inspectors. The report of the chief of the Bureau for 1901, should, on account of its interesting information, be read by every veterinarian.

We note that the last National Horse Show was the most successful ever held in this country. That the good horses have not been as scarce, and, all things considered, as high in the markets as now.

To indicate the status of veterinary education in this country, a few years ago nearly every veterinarian thought he knew everything. Now, nobody knows anything. Is not this a potent indication of the progress of intelligence and education? The world owes you nothing. You owe it the influence of your best faculties. Pay the debt you owe and the present will reward you, while coming ages may not cease to bless you.

REPORT OF THE COMMITTEE ON LEGISLATION.

By W. HORACE HOSKINS, D. V. S., Philadelphia, Pa.

Since our meeting one year ago we have closed a session of our legislature in Pennsylvania, which I have no doubt you are all familiar with. Before this body there were several bills that we were interested in for the welfare of our State Live Stock Sanitary Board and one bill that we were most especially and deeply concerned in. You will recall our adjournment one year ago under a necessity of going to our State Capitol, there to vigorously protest before a committee of the House against the passage of a Senate bill known as the Stiles bill, destined to reopen registrations of non-graduates. Those of you who were among the body that personally protested against the measure will remember the favorable assurances from the Public Health Committee that this bill would not be favorably recommended, and recall the fact that they returned the bill to the House with a favorable recommendation, all at the dictation of certain powerful influences who were using this as well as other pernicious measures for ulterior purposes. Realizing the unwarranted and unmerited strength back of this measure from that hour on until the defeat of this vicious proposition, we were compelled to

wage daily and hourly warfare against this bill and the calling of every veterinarian from Lake Erie to the Delaware to personally use his influence at home and at Harrisburg against this proposed dangerous legislation, and nothing in the world saved us from its evil influences but the almost unanimous flood of protests by letter, by wire, phone and personal visitation, filed with our legislators in the State Capitol. This bill was the greatest test of association worth and professional union, and a triumphant trial of our combined strength. Our present laws have undoubtedly worked some hardships, but these are the great exceptions and should not be counted against the great benefits derived by our people in better educated and trained veterinarians.

Two other measures of interest to us as veterinarians were passed at the last session of the State Legislature one of which will greatly contribute to the efficiency of the work of the State Live Stock Sanitary Board. In compelling the proper disposal of the carcasses of animals dying with infectious and contagious diseases, much will be saved in deterring the spread of these diseases as well as preventing their becoming fixed on farms and grazing grounds.

A second bill was passed whereby the owners of horses and cattle as well as sheep may be compensated for the loss of these animals from the dog tax fund, where they have died or been destroyed as suffering from "rabies." This law, it is thought, will contribute to the more thorough collection of dog taxes, the destroying of homeless dogs and wandering curs and be a source of relief to those who suffer losses through this malady. It may require some modification in that all such losses shall be certified to by the State Live Stock Sanitary Board to avoid possible unjust losses.

By DR. JAS. W. SALLADE, V. S., Auburn, Pa.

As one of the Committee on Legislation, I want to report briefly that as all or most of you are aware the Stiles bill opening the registration period was defeated by our last legislature. The push that went to Harrisburg combined with the individual effort of every member of this association had done its work so well that when I went to Harrisburg a second time, before the final vote on the bill, with a willingness to agree to a proposition to allow such as had neglected either by indifference or through ignorance to register in time, but could clearly demonstrate to the State Board their right to do so, had they availed themselves of the opportunity in time to register, the mem-

bers of the legislature, I found, had been so thoroughly aroused by their home veterinarians that nothing would fit them but a vote to defeat the entire measure. I was delighted to learn that the profession had so much influence, and make this statement so as to encourage you in concerted action upon legislation.

Many of you who were not placed as I was do not realize your strength.

It developed that the legislator was afraid of the influence of his home veterinarian.

I wish to draw attention to a piece of legislation that I believe would work much good to the profession. I merely touch upon the matter, leaving it open for suggestions and thereby hope to draw out the full sense of this association.

I refer to the registration of veterinarians. I would suggest that the next legislature be asked to alter the law by passing an act requiring registration with the State Board every three or five years at a nominal fee, and repeal the act that requires registration with the prothonotary of each county.

In this manner you would support the hands of your Board, keep your register clear and require those not associated with us in this association but who derive the same benefit from the several acts of the Assembly secured at the hands of the Association to contribute their efforts to ours in the advancement of the profession.

REPORT OF COMMITTEE ON ANIMAL HUSBANDRY.

By GEO. B. JOBSON, V. S., Chairman, Franklin, Pa.

In the previous report of this committee, figures were given showing the importance of, and the amount of wealth invested in the animal industry of Pennsylvania. While these figures giving the numbers and estimated value of the horses, cattle, sheep and swine in this State, show the immense capital invested in live stock, it is not merely from a commercial or financial standpoint on which we must base our estimate of the relative importance of this industry to the citizens of our Commonwealth. When we take into account the fact that the wholesomeness of the products derived from our domesticated animals, in the form of meat, butter and cheese, is largely dependent on their health, their sanitary surroundings, and methods of handling these products, we begin to appreciate in some measure the importance of the animal husbandry, in relation to the health of the consumer.

We endeavored to demonstrate the position which the vet-

erinary profession holds to the animal husbandry of this Commonwealth. That the mission of the veterinarian, as formerly understood by his client, lies not so much in curing the diseases of animals, as in their prevention and control, by advising the owner regarding the enforcement of efficient sanitary and hygienic measures which shall prevent the approach of, or control the spread of disease.

The reports issued by the Agricultural Department of the several States, and the Bureau of Animal Industry, are all prominent factors in educating the farmer regarding the necessity of adopting such measures as shall provide for the comfort and sanitary condition of his live stock, and to keep in line with these improved educational advantages enjoyed by our agricultural friends, the education of the successful veterinarian, in rural districts, will necessarily require to embrace a course of study which shall enable him to give intelligent advice in regard to the sanitary housing, feeding, and general care of farm stock. While probably not so essential, a knowledge of the good qualities and points of the various breeds is a very useful qualification.

The State Live Stock Sanitary Board is still fighting the good fight for the control of, and stamping out of bovine tuberculosis. The badly infected herds having been first inspected, those now being tested show a much smaller percentage of diseased animals. While the public, generally, appreciate the good work which is being done by the Board for the control of tuberculosis within our own borders, and preventing the entry of untested dairy and breeding stock into this State, yet there are a few noisy and carping critics, who make wholly irresponsible and unfounded statements regarding cattle inspection, and the tuberculin test, which only go to show their own ignorance of the utility of this test for the detection of tuberculosis. It is to be deplored that a few of our live stock journals are still prejudiced against the tuberculin test as a means for the diagnosis of tuberculosis. A recent communication in one of these journals by a veterinarian resident in a neighboring State was not only a breach of professional courtesy, but a gross insult to the veterinarians of Pennsylvania.

There does not appear to have been any severe epizoötic disease among live stock since our last report. A form of hæmorrhagic septicæmia occurred in a herd of dairy cattle near Corry, during the latter part of September, and at the same time in a herd in Warren county. It was characterized by severe hæm-

orrhagic diarrhoea, elevated temperature, and rapid respiration, and in the majority of the animals affected proved fatal in a few hours. At both places the cattle were pastured on poor, unclaimed land, partly in woods, and the water supply was bad, being the surface drainage from the land. Removal to other quarters, and feeding corn fodder, stopped further extension of the outbreak. On suspicion of anthrax, specimens from animals affected in both herds were forwarded to the Bacteriological Laboratory of the State Live Stock Sanitary Board, but the results were reported negative. One of two of the last animals affected, which lingered for some weeks after being attacked by the disease, was slaughtered for post-mortem examination. The lesions found in this case were only those of simple gastro-enteritis. The abomasum, pyloric orifice, and intestine adjoining the organs were intensely inflamed on their mucous surface. The ileo-cæcal valve and colon in spots were also affected in the same manner. The débris of dried leaves in considerable quantity, along with corn fodder which had been lately fed, were found in the rumen.

The demand for dairy inspection by municipalities is increasing, although much remains to be done by way of educating the public regarding the advantage of inspection, in providing a pure and wholesome milk supply for consumers. When a system of milk inspection is first introduced in a district, it is well to make the requirements not too exacting, but gradually lead up to that point which will give a good and efficient system of inspection. The difficulty in most cases is not that the milk is of poor quality, but in impressing on farmers and dairymen the necessity for providing enough air space, plenty of light, keeping the stable in good sanitary condition, and having proper conveniences and methods for cooling and handling the milk.

It is with pleasure we note the demand for, and good prices realized for all classes of farm stock, horses, fat cattle, dairy stock and its products, and the generally improved financial condition of the farmer. Usually with this financial improvement the agriculturist desires to improve the quality of his live stock, this increased value creates a demand for the services of the veterinarian when it is attacked by disease, which proves how closely the prosperity of the veterinarian is dependent on the farmer.

REPORT OF COMMITTEE ON ANIMAL HUSBANDRY. NO. 2.
Mr. President and Gentlemen :

This is a subject of great importance to us; if animal husbandry fails, our practice is gone.

No legitimate industry can suffer without rebounding to the injury of society in general, and most certainly none can take rank ahead of the industry that affords the human family its meat and milk supply as well as the chief part of the power used in tilling the ground, storing, preparing and moving the crops ; delivering the articles of commerce to the doors of our homes and moving the engines of destruction and our rough riders in time of war.

From the careful investigation of the *American Agriculturist*, we find a loss of 4 per cent. in farm stock values during the twelve months from January, 1901, to 1902 ; the total shrinkage being over \$125,000,000, notwithstanding a moderate increase of numbers in all class of animals except hogs.

The average price of horses has declined 2 per cent. ; mules, 1 per cent. ; cows, 5 per cent. ; cattle, 11 per cent. ; sheep, 10 per cent., while hog values have advanced 17 per cent. If this condition prevailed only in the drought-stricken districts, we might consider the cause local, but, in every State, the decline is noticeable and quite uniform. Of course the high price of feeds and forced sales of stock have had their influence ; but aside from these, there are plain indications that the upward trend of live stock values are over and on the decline. We hope and trust they will not again reach the ruinous prices which governed the market in 1896.

The average price of hogs increased \$1.11 per head the past year, making a bright prospect for the hog-raiser who is well stocked and well posted in economical production. Prices will doubtless be well maintained for at least one year, owing to the unusual slaughter of store hogs and brood sows, causing a light pig crop this spring. In fact, anomalous conditions are present among the other meat producers (cattle and sheep).

Cattle, known as stockers, can be bought lower than at any time in recent years, while prime beef cattle and veal calves are at top notch. Store sheep and lambs have ruled low, while the well-fatted carcass markets well ; giving the man who has capital and understands the science of feeding a chance to make money. It is true that the farmer has shown prudence in hesitating about feeding on corn alone this winter. But cotton and linseed meals and the gluten foods are proportionately lower and can be profitably used, with corn, in making beef, pork and mutton, while the value of the manure heap is greatly enhanced in consequence.

The Eastern farmer who raised one hundred bushel of corn

to the acre and laid in a good supply of nitrogenous foods during the summer and early autumn has been in position to turn the markets to good advantage.

The feeding problem is of first importance in animal husbandry and the veterinarian should be the farmers' ready advisor under the varying conditions.

ALUMNI SOCIETY OF THE VETERINARY DEPARTMENT OF THE UNIVERSITY OF PENNSYLVANIA.

The regular annual meeting was held in Houston Hall, June 18th, 1902, with the following alumni present:

C. J. Marshall, '94; S. J. J. Harger, '97; Casper Garnett, '88; A. F. Schreiber, '88; Charles Lintz, '87; W. R. Andrews, '00; G. W. Homer, '00; Charles E. Magill, '93; J. Alvin James, '93; H. D. Martien, '96; Frederick Stehle, '01; Edgar W. Powell, '00; T. S. Carlisle, '01; J. D. Houldsworth, '02; F. H. Bradley, '02; Fred Weitzel '02; A. A. Harmon, '02; W. J. Storm, '97; H. Fergenbaum, '02; H. Baker, '02; S. C. Babson, '02; Oscar F. Stearns, '02; John W. Adams, '92; Leonard Pearson, '90; S. J. Cole, '02; Sam'l Burrows, '02; E. M. Ranck, '97; and W. Horace Hoskins, D. V. S., American Vet. College, Thos. B. Rayner, V. S., Philadelphia College of Vet. Surgeons.

The minutes of the previous meeting were read and approved, after which we had reports of various officers and committees.

The Library Committee, under chairmanship of Dr. Leonard Pearson, brought to our attention the necessity of libraries in veterinary colleges, and through his efforts a committee was formed to see if the library of the late Dr. Rush Shippen Huidekoper could not be bought. It was the intention of this committee to have a number of contributions made so that this library could be procured for the Veterinary Department of the University of Pennsylvania.

Dr. Rayner was among those who were approached on this subject and out of his generous nature he willingly assumed the responsibility of purchasing the library and presented it to the Veterinary Department. The only restriction Dr. Rayner has placed on this purchase is that it shall be available for all veterinarians throughout the country, and we are glad to say that since it has been placed in the Library building of the University of Pennsylvania, it will be accessible at all times, as this rule prevails there.

This library is presented as a memoir to Dr. Rayner's late son, Moncure R. Rayner, who died while pursuing his course in our department.

Dr. Adams, of the same committee, in making a report under the same heading, said "it is the intention as soon as we have a fire-proof building, to have these books removed to the Veterinary Department proper." He expressed his gratitude in a very pleasing manner to Dr. Rayner, and said that he hoped we would show our appreciation by our assuming the task of adding to this munificent gift.

Dr. Harger, in making a few remarks in reporting on the same committee, said "that Dr. Rayner wishes to improve the status of the profession from his extreme love for the same." Dr. Harger, who knew his son so very well, who took a great interest in his studies, referred to the fact that had he not been taken from us, he would probably be one of the shining alumni of our department now.

The further reference to the report of this gift will be found under the head of resolutions.

This report was accepted as above, and ordered to be spread upon the minutes.

The report of the other library committee was not available; this committee having been recently appointed, did not have time to prepare a report.

The Secretary and Treasurer reported the financial conditions of the society, which shows it to be in a prosperous state. A number of the graduating class showed their interest in the association by enrolling their names on the membership list.

Following this was the annual election of officers, which resulted as follows :

President—A. F. Schreiber.

Secretary and Treasurer—E. M. Ranck.

Historian—S. J. J. Harger.

Executive Committee—Charles Williams, S. J. J. Harger, Leonard Pearson.

Under the head of new business, resolutions were adopted as follows :

WHEREAS, It has pleased Divine Providence to remove from our midst our late fellow alumnus and esteemed friend and colleague, Dr. Frank T. Shannon, whose integrity, noble impulses and professional ability were appreciated by us all; and whose endeavors were always exerted for the welfare and prosperity of the veterinary profession, be it therefore

Resolved, That this association sincerely regrets his loss so early in

his useful career, and extends to his parents its sympathy and condolence in their great loss ; and be it further :

Resolved, That these resolutions be spread upon the records of this association and a copy thereof be transmitted to the parents of our deceased friend and to each of the veterinary journals in the United States.

WHEREAS, In response to the immutable laws of Almighty God there has been called from the strife and turmoil of earthly cares an alumnus of this society, Dr. James Beatty. Again are we reminded of the uncertainty of life, and the certainty of death. We mourn his early demise, not more in response to a sympathetic chord of sadness in our hearts than because we realize the blighting of a bright prospect of future development into a strong manhood, a useful member of society, and a benefit to his profession. His integrity of purpose, purity of character, and loyalty to his many friends endeared him to this society, and made him an associate worthy of emulation. Endowed with a cheerful disposition, and a warm sympathetic nature, he wound about all our heart the tendrils of his love and affection. It may truly be said of him that he was a wise and valued counselor in prosperity, and a sincere friend in adversity. The members of this society, and those to whom his qualifications were best known and appreciated can only bathe his memory in their tears, and lay upon his resting place the wreath of their affection. Therefore, be it

Resolved, That by the death of Dr. Beatty, this society has sustained a loss of one of its brightest, most useful and beloved members, and the University of Pennsylvania a warm supporter and one of its representative men. That the ranks of the profession for the practice of which he had prepared himself will feel the loss of one worthy of the highest honors possible of attainment. And that society at large is deprived of the influence he might have exerted and the good he might have done.

Resolved, That a copy of these resolutions be spread upon the records of this society and that they be published in the "Alumni Register."

WHEREAS, Through the generosity of Dr. Thos. B. Rayner, of Chestnut Hill, the large and valuable library of the late Dr. Rush Shippen Huidekoper has been purchased and presented to the Veterinary Department of the University of Pennsylvania, as a perpetual memorial to his son, Moncure Robinson Rayner, class '96,

Resolved, That we, the alumni of the Veterinary Department of the University, are profoundly grateful for this munificent gift, and do pledge ourselves to do all in our power to enlarge and render efficient the Rayner library. Be it therefore

Resolved, That Dr. Thos. B. Rayner be elected an honorary member of the Alumni Society of the Veterinary Department of the University of Pennsylvania. Be it further

Resolved, That an appropriate tablet inscribed with the name of the donor and his magnificent gift, be placed in the library room of the new Veterinary Building.

A plan was proposed for the perusal of the members present to establish a fund for the library by creating stocks in a building association. This was thoroughly discussed by members present, who are members of various building associations, and

also by Dr. Hoskins, who has been a director of one for a number of years.

A motion to have the Library Committee given power of attorney to formulate plans to start such a fund, to work in connection with the Executive Committee, was unanimously adopted.

W. Horace Hoskins, D. V. S., Alexander Glass, V. S., and John Marshall, M. D., were elected honorary members.

We next listened to an excellent address from Dr. Leonard Pearson, for the proposed plans for the new buildings of the Veterinary Department, which we have every reason to expect to be completed in a very short time.

The following committees were appointed by the incoming President for the ensuing year:

Library Committee.—Drs. Adams, Pearson and Harger.

Special Library Committee.—Drs. Felton, Repp and Mohler.

After a general smoke, this being a smoker instead of a banquet, and listening to various remarks from the alumni present, we adjourned.

E. M. RANCK, *Secy.-Treasurer.*

MASSACHUSETTS VETERINARY ASSOCIATION.

The eighteenth annual meeting was held at the Hotel Cecil, Wednesday evening, April 23. Members present: Drs. Blackwood, Beckett, Bunker, Emerson, Harrington, Howard, May, Peters, Pierce, Rogers, and Winchester.

Applications for membership were received from Dr. John F. Conners, of South Boston, and Dr. Geo. F. Quinlan, of Brookline.

The election of officers for the ensuing year resulted as follows:

President—Dr. B. D. Pierce, of Springfield.

First Vice-President—Dr. H. P. Rogers, of Allston.

Second Vice-President—Dr. Geo. Lee, of Brighton.

Secretary-Treasurer—Dr. E. T. Harrington, South Boston.

Executive Committee—Drs. Austin Peters, Thos. Blackwood, J. R. McLaughlin, W. L. LaBaw, and M. Bunker.

There was a general discussion as to the advisability of changing our place of meeting as a means of increasing the attendance. It was voted to refer to our May meeting for definite action the following motion: "That the contract for the ensuing year with the Boston Medical Library be not renewed, and a contract be entered into with the Boston Veterinary Hospital,

to the same end, if satisfactory arrangements can be made."

The resignation of Dr. Etienne, of St. Hyacinthe, P. Q., was read and accepted, and it was voted that the Secretary send him a letter of regret.

After the business meeting the members sat down to the banquet and passed a very enjoyable evening.

After the banquet the following toasts were proposed by the toastmaster, Dr. L. H. Howard: "Our Association," by Dr. B. D. Pierce; "One of our Oldest Members Honored by the National Association," Dr. J. F. Winchester; "Harvard Veterinary School," Dr. E. C. Beckett; "The American Veterinary College," Dr. M. Bunker; "The Commonwealth of Massachusetts," Dr. A. Peters; "McGill University," Dr. T. Blackwood; "Our Out-of-Town Members," Dr. D. Emerson; "The Bureau of Animal Industry and Sanitary Police," Dr. H. P. Rogers; "Our Secretary," Dr. E. T. Harrington; "Our Profession Across the Water," Dr. H. S. Lewis; "The Ladies," Dr. A. W. May.

The meeting then adjourned.

EDW. T. HARRINGTON, *Secretary.*

NEW YORK STATE VETERINARY MEDICAL SOCIETY.

The annual meeting will take place at Brooklyn, on Sept. 9 and 10, the week following that of the A. V. M. A., and arrangements are well under way, insuring a splendid reunion. The members resident in and about Gotham are determined that this year's meeting shall not fall one whit behind those held in Ithaca the past two years.

The local committee of arrangements, consisting of Drs. Bell (Chairman), Berns, Ackerman, Robertson and Kelly, have held several meetings and each has assumed charge of certain parts of the work. Dr. Berns will look after the clinic, which will be held at his large and complete infirmary; Dr. Ackerman will have charge of the hotel accommodations and entertainment. The chairman will coöperate with Secretary Kelly in soliciting a literary programme, and assist the other members in their work, while Dr. Robertson will be a valuable coadjutor and advisor to the whole proceedings.

The first day will be devoted to the business of the society, the reading and discussion of papers, and an evening session will be necessary for this purpose. On the morning of the

second day, the surgical clinic will begin, lasting until the early afternoon, when an excursion to some nearby resort will be tendered the guests, at the terminal point of which a shore dinner will be served.

We advise Empire State veterinarians to mark this meeting down upon their calendars.

MICHIGAN STATE VETERINARY MEDICAL ASSOCIATION.

The meeting was called to order at Lansing, Feb. 4th, by President J. J. Joy. Almost 40 members answered the roll call. President delivered his annual address. A committee was appointed to arrange program of entertainment for the ladies. Minutes of previous meeting were read. Eight new members were elected. Letters from absent members were read.

W. W. Thorburn, Secretary of State Veterinary Board, was expelled.

Dr. J. Hawkins, Prof. Chas. E. Marshall, of the M. A. C., and Dr. H. B. Baker, Secretary of the State Board of Health, were elected honorary members. Resolutions of sympathy on the deaths of Mrs. Wooley and Dr. R. E. Hunt were adopted. Delinquent members were suspended for non-payment of dues.

The following officers were elected :

President—H. F. Palmer, Detroit.

First Vice-President—H. M. Gohr, St. Johns.

Second Vice-President—J. Harrison, Maple Rapids.

Third Vice-President—H. S. Smith, Albion.

Secretary and Treasurer—W. A. Giffen, Detroit.

Directors—Judson Black, J. W. Brodie, D. G. Sutherland, Wm. Jopling, J. J. Walkington and A. McKercher.

The Secretary's report was read. A resolution was adopted giving Secretary \$15 in addition to salary for the year's work. Treasurer's report was read, showing a balance of \$130.16. Committee on Diseases reported. State Live Stock Sanitary Laws were freely discussed.

It was resolved that the Committee on Legislation be empowered to draft amendments to State Live Stock Sanitary Laws, and that said committee be instructed to take such action as may be deemed best to have the amendments brought before the legislature at its next session.

Committee on Intelligence and Education reported.

The banquet was held on the evening of February 4th. Dr.

Geo. W. Dunphy acted as toastmaster. Toasts were responded to as follows: "Our Association," Drs. Brenton, Sutherland, Whitney, Clement, Byers and Cummings; "Legislation," Dr. F. C. Wells; "Our New Members," Dr. H. L. Bellinger; "Our Officers," Dr. H. M. Gohr; "Our Guests," Major H. E. Johnson and Dr. Davis; "Our Bachelor Members," Drs. Smith and McKercher; "Our State Board," Dr. H. F. Palmer; "The Ladies," Drs. Giffen and Jopling.

February 5th.—Dr. Brenton, assisted by Drs. Campbell, Joy, Sutherland, Black and others, demonstrated the following surgical operations: Neurectomy for the cure of lameness, shaking the head involuntarily and cribbing; tenotomy for the relief of stringhalt and bone spavin; operations for spaying in the mare and for the removal of lateral cartilages were performed.

The following papers were read and discussed: "Contagious Diseases of Live Stock in Michigan," Dr. F. C. Wells; "The Work of the Michigan Agricultural College," Dr. Smith; "The Relation of the M. A. C. to Veterinary Science," Dr. G. A. Waterman; "Veterinary Protection," Dr. Chas. Nyce; "Diagnostic Agents," Dr. H. F. Palmer; "The Horse's Stomach," Dr. Wm. Jopling; "Azoturia," Dr. J. J. Walkington; "Anthrax from the Bacteriological Standpoint," Dr. C. E. Marshall.

The following resolutions were carried unanimously:

(1). Thanks of the association be extended to Hon. A. T. Bliss, Governor, for the kind consideration and many courtesies he has shown us during his term of office. (2). Thanking Hon. J. E. Weter for the cheerful and valuable assistance he has given us in our legislation work. (3). That the association put itself on record as favoring higher veterinary education in colleges and a curriculum of at least three years.

Dr. Joy installed the newly-elected President, Dr. Palmer. The President appointed the following committees:

Legislation.—Drs. Giffen, Wells, Dunphy, Black.

Intelligence and Education.—Drs. Whitney, Smith, Waldron.

Diseases.—Drs. Wells, Gohr, Bellinger.

Clinics.—Drs. Waterman, Manning, Irwin.

Finance.—Drs. Hamilton, Farmer, Muir.

A motion to adjourn was carried.

W. A. GIFFEN, *Secretary.*

NEWS AND ITEMS.

DR. F. D. LUCKY and Dr. J. W. Connaway, of Columbia, Mo., were recent visitors in Kansas City.

VETERINARIAN R. J. STANCLIFFE, 8th Cavalry, U. S. Army, has been transferred from Cuba to Fort Reno, Oklahoma, I. T.

DR. THOMAS CASTOR, U. S. inspector in the quarantine field and stationed at Trinidad, Colorado, recently visited his many friends in Philadelphia.

DR. CARL W. GAY, graduate of the New York State Veterinary College, class of '99, is now filling the chair of Veterinary Medicine and Sanitary Science in the Iowa State College, at Ames.

DR. HORACE H. COLLINS, of Elizabeth, Pa., and Dr. Robert W. McKibben have recently been appointed assistant inspectors in the Bureau of Animal Industry and are stationed at Kansas City.

THE Kansas City force of meat inspectors has been augmented by the appointment of Dr. Wilhelm Scheumacher, of Milwaukee, Wis., Dr. James N. Shepard, of Langdon, South Dakota, and Dr. E. M. Nighbert, of Mt. Sterling, Illinois.

DR. T. EARLE BUDD, of Orange, N. J., has been appointed the official veterinarian of the Atlantic City Horse Show, which occurs July 15th to 19th. Dr. Budd belongs to the advanced guard of the veterinary profession of New Jersey, and it is gratifying to announce his appointment.

A DISPATCH from New Orleans, La., of June 21, says that the great prevalence of charbon and glanders among the live stock of South Africa is due to inoculations in New Orleans by Boer sympathizers, and that the virus was obtained from a Philadelphia chemist.

DR. A. M. LEEK, of New Haven, Conn., who has been with Dr. Ryder at the American Horse Exchange, New York City, for some time past, is assistant to Dr. T. S. Childs, at the Saratoga Veterinary Hospital, Saratoga Springs, N. Y., for the summer of 1902.

OTIS MANN, a well-known veterinary surgeon of Stafford Springs, Mass., died June 3, of heart trouble, aged 70 years. While not a graduate, he attended college for two or three years, about 1875, having been a room-mate of the late Dr. Saunders, of Boston, at the A. V. C. From 1880 to 1890 he practiced in Springfield, Mass., and then removed to Stafford, where he built up a large practice.

DR. GEORGE W. POPE, superintendent, has an illustrated article in the *Breeder's Gazette* for June 4 describing the new government quarantine station for the Port of New York, at Athenia, N. J., and the methods of handling and caring for the imported animals who sojourn there previous to distribution throughout the country.

DR. ANDREW HYDE, late of Norwich, Conn., who was recently honored by election to the Presidency of the Connecticut State Veterinary Medical Association, has accepted the position of assistant meat inspector, B. A. I., and is now stationed at Sioux City, Iowa, where he reported for duty on the 6th ult. A studious, conscientious gentleman, he cannot but prove a splendid acquisition to the federal service, while the Nutmeg State will lose one of its brightest and most scientific veterinarians.

GROWTH OF THE AUTOMOBILE.—That very excellent publication, the *Horse-Shoers' Journal*, has been gathering some statistics anent the horseless vehicle, for the purpose of ascertaining the effects of their advent upon the horse-shoeing fraternity. We observe in the long list of cities which are reported that New York and Boston are omitted, and as these cities are the most populous automobile centres the figures as to totals cannot be taken very seriously. However, the *Journal's* object was to show the effects upon the horse, and for that purpose there are certainly enough reported to strike a comprehensive average. The following is a brief *resumé* of the result of the canvass : "Total number of cities reported, 48. Number of automobiles reported in use, 1,975 ; for pleasure, 1,792 ; for business purposes, 183. Total number of shoeing shops May, 1901, 2,462 ; May, 1902, 2,437 ; showing a decrease of 25 shops during the year. In 29 of the cities reporting, an increase of from 2 to 50 per cent. in the volume of trade is shown over last year. Fifteen cities report conditions as being about the same, while in only four is a decrease reported, these in as many different localities, one eastern and two middle states. To the question 'State what class of people are taking to the auto, whether horsemen or not,' a variety of answers have been received, the vast majority going to show those using them are not horsemen. A few others by horsemen who still retain their horses, and still others classing the use of the auto as a fad." The conclusion reached by the *Journal* editor is : "The workman can say with every regard for fact that no injury has so far fallen to the lot of the trade, and, judging by conditions presented, none is likely to come to us."

PUBLISHERS' DEPARTMENT.

Subscription price, \$3 per annum, invariably in advance; foreign countries, \$3.60; students while attending college, \$2; single copies, 25 cents.

Rejected manuscripts will not be returned unless postage is forwarded.

Subscribers are earnestly requested to notify the Business Manager immediately upon changing their address.

Alex. Eger, 34 East Van Buren St., Chicago, Ill., Veterinary Publisher and dealer in Veterinary Instruments, Books, and Drugs, is the authorized agent for the REVIEW, in Chicago and the Middle West, and will receive subscriptions and advertisements at publishers' rates.

WE would again direct the attention of REVIEW readers to page 14, in our advertising department. For the past two months we have been calling their especial attention to this particular advertising page, in the interests of a widow of one of your colleagues, whom Providence saw fit to remove from the side of his mate, and leave her to face the stern realities of life alone, and we would not have them forget her now that we have replaced her "book-advertisement" by another (you still have her name and address in your last month's copy), but we know that you will be especially interested in what you find on page 14 this month, as it is just what you want to know. Our "bulletins" (advertising pages) are always interesting to our readers, for just that reason, they keep them posted on what is on the market for their especial use and where to get it, and this one, which puts you in touch with the officials of the Chicago, Milwaukee & St. Paul Railway, certainly appears at an opportune time, when you are arranging to go to Minneapolis and wondering which is the best route to get there. Write these people and get your mind settled, so that you can give all the rest of your time to your work up to the hour of starting.

THE Zenner Disinfectant Co., whose acquaintance REVIEW readers made nearly a year ago, have published a little "Booklét," which is very interesting, giving much information about Clydesdale and Percheron horses, Shorthorn, Aberdeen-Angus, Jersey and Guernsey Cattle, Southdown and Shropshire Sheep, Poland-China, Berkshire and Yorkshire Hogs; as exhibited at the International Live-Stock Exposition, Chicago, Dec., 1901; which they will present to any REVIEW reader upon making application, and mentioning the AMERICAN VETERINARY REVIEW.

WHAT a large business has opened up in tablets and granules for canine practice. We know of no Veterinarian now who would think of being without them, and yet the REVIEW first advocated them about three years ago. The Abbott Alkaloidal Co. (ad. on inside back cover) were the pioneers and remain the easy leaders.

PRACTICE FOR SALE.

FOR SALE.—Practice in city of 5,000, county seat of one of the best farming counties in State of Missouri, no other graduate in county. Business will amount to \$1500 a year and increasing. Reason for selling, have accepted position with Government. Price, \$300 cash; don't write unless you have money and mean business. Address, "Business," care of AM. VET. REVIEW, 509 W, 152d St, New York.

AMERICAN VETERINARY REVIEW.

AUGUST, 1902.

All communications for publication or in reference thereto should be addressed to Prof. Roscoe R. Bell, Seventh Ave. & Union St., Borough of Brooklyn, New York City.

EDITORIAL.

EUROPEAN CHRONICLES.

AN old French proverb says : " Faute de grives, on mange des merles " (" From want of thrushes, one eats blackbirds "). From want of man to test the new theory of Koch, one has to be satisfied with monkeys. Insufficient as that may be, read the rough results :

Carrying out a series of experiments decided upon by the committee appointed by the Société de Médecine Vétérinaire Pratique (see January REVIEW, Vol. XXV, No. 10, page 788), three monkeys were selected and fed with rice and milk in which cultures of bovine tuberculous bacillus were added. Two received five meals of this appetizing dish, one had only three.

After 69 days, one of the first died. Lesions : extensive ascites, miliary tubercles in the omentum, mesenteric glands extensively diseased, intestinal mucous membrane ulcerated with tuberculous ulcerations ; liver, spleen, lungs, full of tubercles.

Another monkey was killed about a month later, and exhibited lesions entirely identical : tuberculous peritonitis, tuberculous mesenteric glands, ulcerations of the intestines, liver and spleen extensively diseased, lungs to less extent.

The third monkey, older, larger and more resisting therefore, in comparatively less diseased condition, was allowed to live a month longer, and at the post-mortem revealed lesions

very similar to those of the two subjects, but less developed.

A fourth monkey which had been killed at the beginning of the experiment to compare with the condition of the others, proved entirely free from tuberculosis.

From these experiments what is proved? First, by the extent and the quantity of the lesions of the digestive canal and its annexes, that it is evident that the intestinal mucous membrane is the way of entrance of the virus and that the infection has without doubt been the result of the *ingestion* of the infected food—a regular *tabes mesenterica* on a small scale; a confirmation of the danger so powerfully demonstrated by Nocard and others, and which plainly justifies the exclamation of Nocard: “Mothers, always boil the milk before you give it to your children.”

Will, after this, Koch tell us that the dangers of human infection are exaggerated? Truly, the subjects of experiments were only monkeys—but, as we said in the beginning, “faute de grives, on mange des merles.”

But that is not all the results that can be obtained by this experiment that Prof. Nocard has been carrying out with all the care and attention that he brings to all his researches. The lesions which were found in such a short time were enormous in the first two monkeys. If they were of less extent in the third, although a longer time was allowed to elapse, it is because he was older, stronger, more developed, and more able to resist. Is it not the same in the human family, where in two individuals similarly exposed, one will resist longer than the other? But the result will ultimately be the same. And from the condition of the lesions that were found, from the rapidity of their development, the great virulence of the bovine tuberculous bacillus is demonstrated, as well as the excessive receptivity of the monkey for this bacillus.

Would similar results have been obtained with human tuberculous infection? This is a new question. Which of the two, bovine or human, is the more dangerous? The problem is now the object of new experiments.

I will send our friends the complete report of Professor Nocard as soon as it is published.

* * *

MUMPS, which we find described in works on canine pathology under the general heading of the various forms of parotiditis, has taken the attention of pathologists, and it seems that, according to recent researches, an interesting fact has been made out, viz., their contagious property from man to dogs, and although the cases observed are yet few, it is not improper to call the attention of practitioners to it. This, however, is not a new idea. In 1842 Schüssèle and Hertwig mentioned something about it, and later Dr. Busquet spoke to the Académie of Medicine of the transmissibility of mumps from man to dog. But yet specialists seemed to have ignored it. Recently, however, I find in one of the Belgian journals an article which tells us: (1st) That dogs are susceptible of presenting the symptoms of mumps; (2d) that the disease is transmissible from dogs to dogs; (3d) that in the sick animal, a microbe is found which grows in the saliva, under the form of a diplostrep-tococcus and is analogous or identical to that which was found in the mumps of human origin in 1895 by Ferré and Busquet in the saliva and in the blood under the form of a diplo-coccus analogous or identical to the one described by La-veran and Catrin in 1893, which they had found in human mumps.

Dogs in which the symptoms justified a diagnosis of mumps, always, according to recent observers, had been in contact with persons suffering with this peculiar parotiditis. The symptoms which they presented were: Dullness, anorexia, chills, sneezing, and a puffy swelling of the salivary glands on one side, rather painful. This last symptom is of much importance for the diagnosis.

Several cases are already recorded. Contagion has been proved by the use of a little ball of wadding, which had served to wipe the mouth of a dog diseased.

Specialists on canine diseases and bacteriologists have now a new good field to observe and investigate. They will no doubt be listened to with attention.

* * *

GLANDERS is probably the most horrid disease that man can contract from horses, and on that account the recent work of Prof. Galtier, which I find in the *Journal de Zootechnie*, will carry great value. Bearing in mind that the entire organism is infected, and that it is always dangerous to manipulate it without much precaution, yet, notwithstanding that, and with the knowledge of the danger, how many are the fatal accidents by the numerous ways of entrance which are open to the virus either in man or in animals.

Indeed, Prof. Galtier says : "To better appreciate the extent and the severity of the dangers due to the relations between persons and glanderous animals, either with their cadavers, their remains, or the objects soiled by the virus, it is important to know as exactly as possible the part played in absorption by mucous membranes and by the skin.

" Mucous membranes, intact or slightly irritated, may absorb the glanderous virus which comes in contact with them. This has been seen with the pituitary membrane and with the mucous membrane of the intestines, likewise with the conjunctiva and the genital mucous structures. However, abrasions, desquamations, or frictions render the absorption more certain. The conjunctiva, when diseased, injured, irritated or even intact may absorb the virus, and the projections of glanderous substance in the eye or simply touching it with the soiled fingers or impregnated objects is sufficient for infection.

" In various epochs, I have experimented to appreciate the danger of projections of glanderous virus on the eye, and have used all kinds of virulent products.

" In a series of seven experiments, which I made in 1894, on some forty-two guinea-pigs, I have seen twenty-two become glanderous ; all had been inoculated on the conjunctiva, with a

loop of platina dipped in a culture of glanders, and had been left without any after-care.

"In 1896, in comparative experiments, I observed that the glanderous virus deposited on the pituitary membrane gave rise to the disease oftener than when it was placed on the mucous membrane of the eye. Ten rabbits and ten guinea-pigs which had received it in the nose became diseased, while in a similar number where the eye was inoculated, only three rabbits and six guinea-pigs developed glanders.

"In 1899, after an accident, of which I was the victim, I repeated and made more experiments on the absorbing power of the conjunctiva and upon the efficacy of washings with iodurated watery solution."

In glanders, especially in acute, everything, every structure, almost all the liquids, even the blood being virulent, can danger of such contact be exaggerated, and can we ever say too much of the precautions that the practitioner or the bacteriologist must take? No;—and, yet, if by hazard or by unfortunate circumstance, a possibility of inoculation occurs, time must not be lost, and every measure resorted to to destroy the bacillus of Loeffler, which, if it has a chance, will soon invade the whole organism, which is bound to succumb under its attacks, no matter how high resisting power may be.

* * *

I HAVE received from my friends in America, papers in which probably interesting subjects were printed, and to which, I suppose, the sender desired to call my attention. I take this opportunity to thank my thoughtful colleagues, but must ask them to kindly mark with colored pencil the parts they wish me to look at. Our American journals are quite large, they contain in their numerous pages such a variety of subjects, of news, of information and of advertisements, that it is some times very difficult and not uncommonly impossible to find what one is looking for. A little blue or red pencil mark will clear the subject at once.

A. L.

ON TO MINNEAPOLIS.

When the REVIEW again has the privilege of addressing its readers the minions of the veterinary profession will be in session at the metropolis of the great Northwest, where they will be in attendance upon the thirty-ninth annual meeting of the American Veterinary Medical Association, the representative organization of the whole profession, in all its phases, and which claims as its adherents every veterinarian who acts up to its tenets in all the Americas, and in all the possessions of the Government of the United States wherever situated, from Alaska to the Philippines, and from British Columbia to Patagonia—no matter in what field of veterinary science he may labor, nor whether he be the most distinguished investigator or the humblest every-day practitioner.

It is quite evident to those who have watched the development of the programme of the coming meeting—literary, clinical and social—that we are on the eve of a very successful meeting, probably the greatest from every point of view that has ever been held. It is a progressive organization, and it *should* be the most valuable and largest in her history. Everything points to a record-breaking attendance this year, and the prospects for additions to the membership in the new territory of the Northwest and Canada are very encouraging. The association contains upon its rolls no more able, enthusiastic and energetic members than hail from the State of Minnesota, and the local committee is composed of the flower of its veterinarians, so that we know that the standing invitation to the A. V. M. A. to come to Minneapolis proceeded right from the heart, and now that it is about to throw its tents within her hospitable gates, the National Association can be right sure of a hearty welcome.

In the news department of this issue will be found as full a programme as it was possible to obtain up to the hour of going to press; and we submit that it is a very attractive one, containing intellectual food for every hungry one, with social admixtures to please all. Through the kindness of Dr. M. H. Reynolds, of the Arrangement Committee, the REVIEW is en-

abled to present a view of the veterinary hospital of the University of Minnesota, where the clinic will be held, and also an interior view of the clinic room. From a glance at these pictures it will at once be seen that the A. V. M. A. has never enjoyed such privileges, and it is very much more than probable that the criticisms formerly heard in reference to the clinical facilities at our meetings will be effectually silenced, and that all will agree that the surgical clinic is a grand and permanent section of the annual gatherings.

The section of greatest importance, possibly, in an association representing the American veterinary profession will be the broader questions involving the progress of the science in a national sense, and there is in the programme no curtailment of the time to be devoted to these great problems. The basis of all advancement rests naturally with the question of education, and so the universities, colleges and examining boards will be reviewed and considered by the lights reflected through their work. State medicine and research work are right in the foreground of our professional life, and there will be present to give them consideration, men who devote their entire lives to these fields. The immensity of these subjects renders their consideration practically inexhaustible, and of course the most pressing questions only can receive consideration. Not the least important is the matter of legislation, of a national character, and the committee having it in charge will give a good account of its stewardship.

Associational progress will also call for earnest consideration, which involves the questions of policy, whereby the greatest good to the largest number can be made to flow from its efforts. With papers upon practical subjects, and other themes of general interest, one must have the conviction forced upon him that no veterinarian who wishes to keep in the moving column can stay away from this year's convention except at great loss to himself.

The social features of the coming convention promise to make the respite from the routine of professional duties a de-

lightful diversion, so that the work to be done can be accomplished under the most pleasant auspices.

Get ready for Minneapolis !

WISE AND OTHERWISE.

It is regretted by many with whom we have conversed that the Pennsylvania State Association should have felt itself called upon to censure the New York State Association for its method of dealing with one of its members. At the last meeting of the latter association charges were preferred against Secretary Claude D. Morris for his action in connection with the Army Bill before Congress. The Executive Committee received the charges and disposed of them according to the by-laws of the society, which imperatively requires that "any member who shall be deemed . . . unfit for continuing in membership . . . shall be cited to appear at the next regular meeting and show cause why he should not be expelled," etc. This was plainly the only legal action which the society could take, and the action of the Pennsylvania Association in passing a resolution (printed elsewhere) wherein it "regrets and regards with great concern the attitude of the New York State Veterinary Society in continuing to condone this the most flagrant act of treachery in the history of veterinary medicine in America," is inexplicable and wholly gratuitous, as the Empire State veterinarians believe themselves perfectly capable of disposing of questions which properly come before it without the advice or sanction of its Pennsylvania brethren. In the discussion of the reports at the meeting of the P. S. V. M. A. (published in the June REVIEW), the Secretary quotes Dr. Hoskins as saying: "The [New York State] Association dilly-dallied with the subject and the main effort seemed to be to avoid the issue, and the question was laid over for one year. He feels the association should be censured for its *cowardice* [italics ours], and will introduce a resolution later to this effect." In this the speaker has made a misstatement of fact, since the association neither avoided nor attempted to avoid the issue, as it promptly took it

up and acted upon it calmly, deliberately and legally ; and did not permit itself to become hysterical by inflammatory speeches, such as were uttered at Atlantic City, and when they again meet the subject will be brought up and disposed of according to the by-laws and in the best judgment of the members, irrespective of what a few of the Keystone veterinarians may think. As against this conservative and proper action, our friends who were so hasty and vindictive at Atlantic City may have to reconsider their action, and adopt the same course pursued by the society which has incurred the cominiseration of the Pennsylvanians.

NEW JERSEY VETERINARIANS are not satisfied with having driven the legislative nail right into the head ; they have gone around to the other side and clinched it. The recent law secured by the State Association regulating and protecting the profession was hardly dry upon the Statute book, when the formation of county societies was begun to make sure of its enforcement. To this end the veterinarians of Passaic county have formed an association, and the record of their organization and first regular meeting is given in this number. New York State is much in need of just such a spirit, and it is earnestly hoped that her veterinarians may take heart and follow the good example of New Jersey, now that the way has been blazed.

Dr. M. H. REYNOLDS, of the Minnesota Experiment Station, in forwarding an article on " Nodule Disease of Sheep " for publication in the REVIEW, remarks : " This article was written for farmer readers . . . ; it, however, covers a practical experience which veterinarians in country practice are liable to have at any time, as the disease is becoming very common in this country and is a serious matter for sheepmen." Our readers will find it in this issue in the department of " Original Articles."

" SECTIONAL WORK [in the A. V. M. A.] will come when we have gathered in a large majority of the foremost men in all

the various lines of our work, and not until then."—(*Journal for May*). We would like to see a list of "the foremost men" who are outside of the membership of the Association. Is not such an argument sufficiently ridiculous to discount the whole contention of the *Journal*?

"PESTE" is described by Dr. Coleman Nockolds, veterinarian U. S. Army, Batangas, P. I., in this number. Such widespread and rapid depletion of herds of cattle as he tells of can scarcely be imagined, and, while his experience is extremely revolting, it is intensely interesting as a contribution to the clinical history of the most fell-destroyer known in the annals of medicine, the pestilential rinderpest.

DRS. ANGLICKER AND SCHUMACHER, of Milwaukee, Wis., report the success of Bassi's operation for habitual luxation of the patella in a trick pony in this number of the REVIEW, department of "Reports of Cases." It is extremely interesting, and is considered by the authors as very practical, and one which could well be introduced into general practice.

DRS. HUGHES AND BAKER, of Chicago, have issued invitations to all who are likely to go by the "Veterinary Special" from Chicago to Minneapolis Monday evening, Sept. 1, to a supper on board the train, which will make the journey a most pleasant and enjoyable occasion.

Dr. M. H. Reynolds, of Minneapolis, writes: "The local Committee of Arrangements is receiving a great deal of encouragement concerning the coming meeting of the A. V. M. A., in Minneapolis. Dr. Monsarrat, of Honolulu, has written that he fully expects to be in attendance. He will probably hold the record for distance. What State will have the record for the greatest number of representatives?"

Dr. Reynolds suggests the use of simple State badges for those attending the Minneapolis meeting; something inexpensive, to cost only a few cents.

ORIGINAL ARTICLES.

THE LIVING AND THE DEAD:

REMINISCENCES OF THE VETERINARY PRACTITIONERS OF FORTY
YEARS AGO.

By ONE OF THEM.

(Continued from page 299.)

ISAIAH MICHENER, V. S.

After sixty years of practice, this veteran and pioneer of veterinary medicine received at his death, from the two veterinary journals of the country, obituary notices, where all that could be said of him can be found.

Hard worker, of superior intelligence, and careful thinker, Michener, as it has been stated, was also a self-made veterinarian—which he was justified in being proud of. He held many official positions, we all know, and no one was more deserving or able to fill them. Called to the chair of theory and practice at the organization of the Pennsylvania College of Veterinary Surgeons in 1866, he was already somewhat known outside of his State (Pennsylvania) by the action he took as one of the promoters of the Astor House meeting. He, of course, was one of the first to sign the constitution of the U. S. V. M. A. and a close attendant of the meetings, where his appearance, somewhat Quakerish in aspect, was always welcome.

Dr. Michener wrote quite a number of articles relating to his profession. His pamphlet on the paralysis of the par vagum, to which he attributed the symptoms observed in some manifestations of cerebro-spinal meningitis, was for a long time the subject of many warm discussions at the meetings of the association.

He has received a great moral reward for his love and assiduous labors in behalf of his profession. Three veterinarians began their studies under him. "They are my own students,"

he used to say. Those veterinarians have all made their marks in the profession—Charles B. Michener, one of his sons; A. A. Holcombe, and M. R. Trumbower. Each one has done well and their old first master could of just right be proud of their successes.

Isaiah Michener was rather peculiar in some of his ideas, and, unless we knew him imperfectly, he has appeared to us as being slow or perhaps unwilling to accept new ideas, new theories or new instruments.

We remember a story about him, which occurred many years ago, when his son, Charles B., was attending a veterinary college in New York. The old gentleman had called at the time an examination was being made of a sick horse. The veterinarian who was making it and taking the temperature with a thermometer, in turning round to shake hands, saw him laughing and making fun. "What," said Michener, "thou also make use of those little glass tubes?" At the answer given him, that it was the only sure way to measure the temperature and judge of the fever, he added: "Well, I don't believe it; I do not use it, and I depend entirely on my hand, which will not deceive me." We feel sure that before a long time had elapsed, and after he had had opportunities to use the thermometer and see its advantages, he was not so certain of the infallibility of his feelings with the hand, to detect a dropping or a rising of fever heat of one degree or a fraction.

* * *

THOMAS B. RHODES.

Does this man deserve to be placed here? No; and yet he played such an important part in the veterinary practice of forty years ago, in New York City, that he can scarcely be entirely ignored.

He was an Englishman, and the legend had it that all of his connection with the veterinary profession consisted in having been a stable boy with some celebrated English practitioner. At any rate, in 1860 he was in New York enjoying the largest

practice one could dream of. There was not a firm with horses which did not employ him, and his services (?) were demanded from all the stage companies which ran through New York. He went to private stables, to large and small establishments—in fact, everywhere,—he was the lion of veterinary medicine. And, yet, the man was of the utmost ignorance. Could he read? I doubt it. Could he write? I do not know. In appearance he was small and of rather repulsive manners; he was always dirty, with his clothes full of blood or of stable marks, which seemed to be for him a means of advertising. And, yet, strange to say, he had in the lower part of the western section of New York an infirmary which was kept as many of those of our present day are not.

At the foot of Jane street he had an immense wooden building, divided into large airy box-stalls, with plenty of fresh bedding always, and kept as clean as he, the "doc," was dirty. He had made there an office, where, with few instruments, in good order, with fewer books, he had collected a certain number of specimens, which he exhibited dry or kept in clean glass jars, and with which, with most absurd stories, he related fantastic illustrations of his skill, and, of course, of his wonderful success.

I remember one day he had invited several members of the U. S. V. M. A. to come and visit his infirmary. We all went, and when in his office, C. M. Wood, the mischief-maker of the crowd, detected in one corner on a high shelf close to the ceiling a large jar, in which was floating, hanging, a small body whose form he was unable to make out. He called one of the stablemen to bring it down for our examination. It proved to be a small fish hanging by the tail, the jar being labelled: "This fish I removed from the uterus of a mare." After this, Rhodes never invited any more veterinarians to Jane street.

It is useless to say that Rhodes was not a member of the U. S. V. M. A. It was good fortune for the association, as he might have called at the first meeting, and it would have been difficult to refuse him membership.

Rhodes hung on to his success for awhile, but by degrees his

bad habits took the best of him ; he gradually lost his practice, and, if my memory serves me right, died in want.

* * *
WILLIAM SAUNDERS, V. S.

When Saunders signed the constitution and by-laws of the U. S. V. M. A. at its organization, he was already 46 years old. Having come to America from England, where he was born, accompanying his father, also a veterinarian, he was nothing of a student, and, although he met with a certain amount of success, he was inclined to be arbitrary under favorable conditions.

According to some who knew him well, he was a patronizer well marked, rather liberal and of good judgment, but his mind was made up quickly without resorting to the ordinary way of arriving at conclusions, and yet not without a certain amount of self-confidence. "I cannot see that this horse trots lame," he used to say, "but I can hear him."

This fault of his he certainly communicated to some of his students. He, however, did not accept it with them, but, on the contrary, would ridicule them. I remember one instance of a story he was fond of repeating at some of the last meetings he was with us. One of his so-called students, then raised to the dignity of practitioner, was one day with him, a certain Mr. C , and to him Saunders asked an opinion on a case of lameness. C was a small, insignificant, and, of course, conceited fellow, more fond of smoking either good or bad cigars than of reading a scientific book. He was too happy to express his opinion on a case of lameness when his old teacher asked for it. The horse was brought out of the stable and as he started to move, before he had trotted more than a hundred yards, C turned on his heels, and chewing a cigar bigger than himself (said Saunders), exclaimed but one word to explain his diagnosis—"Navic," said he. If we remember rightly, the horse had not navicular disease, but the name "Navic" stuck to C thereafter.

Wm. Saunders was of a lymphatic temperament, not fond of reading nor of studying, and in his professional life

depended largely on his experience to carry him through.

As an individual he was very congenial, quite agreeable and very friendly. He had been connected with free masonry for many years, belonged to several lodges, and had served in the militia of the State.

Speaking of him, one of our mutual friends writes :

" Nothing to extenuate, nor aught set down in malice.

" W. S. was a good practitioner of medicine. He was safe, had great power of observation, and learned rapidly from that source. He had commercial faculties largely developed, and always had a large business.

" He was a great favorite with almost every one he met, and was generous and genial, every day. People employed him who recognized him as a man of no great education, and they made no mistake in doing so, for their interests were safe in his hands and his judgment in general practice was good.

" He has never been a studious person. It was easy to recognize that. But his manners and dignified appearance carried him along, and it was fair flood tide with him always.

" Every man finds material enough to build with, whether it be foundation or superstructure, roadway or building, but it is hard and a chance for him to select the proper material which shall serve him in building a character and career for himself. And the thought will arise often that the easiest road is the best to choose.

" Napoleons, Cœsars and Wellingtons are few!—So are Websters, Holmeses, and Emersons!

" But does it pay to strive? How few attain? How many of the ambitious fall short of their aspirations?

" I say nothing whatever of W. Saunders, except that he was of that large class, the unlimited majority who choose the easy roadway, and in saying that I hope I have not failed to appreciate all that was pleasant, sociable and companionable in my intercourse with him."

JOSIAH H. STICKNEY, M. D., M. R. C. V. S. L.

Who in the profession does not know Joe Stickney—the clever, highly-educated, thorough diagnostician? At our meetings, we believe, he was the oldest practitioner of veterinary medicine. To Boston, whence he went to London to graduate, he returned to practice, and was there with Mr. Lillyman, the only graduate in Massachusetts. He from the start made his mark among his brother practitioners, lectured at Amherst on veterinary topics, and when the U. S. V. M. A. was organized, as a token of appreciation, he was unanimously elected the first president of the new-born professional body.

Dr. Stickney, for he had before going to England taken his degree of M. D., was in 1860 a very active man, always ready for a scientific discussion, a consultation or a doubtful diagnosis to settle. He was most hospitable to his friends, and always preparing for their reception some gay entertainments, especially for the semi-annual meetings of the association, which were held in Boston.

Some few may remain of those days; if there are any, they may recollect the long drive he gave us to his father's home, one of the most beautiful spots around Boston, through roads lined with old trees, many loaded with fruit. At the end of the drive we had a charming collation. But after pleasure, work must come. There was a doubtful case of lameness; a general consultation was to be held, and each one must express his opinion on a piece of paper and throw it in a hat. One of us, "Frenchy," as he was nicknamed, in examining the horse, made a motion which made the horse jump, and one of his feet crushed the toes of our friend by stepping upon them. The injury was not severe, but the sarcasm that befell our dear foreigner served him a good lesson in making him more careful afterwards. It is strange, but that was the last of our pleasant excursions at those meetings.

At the time of our writing the above Dr. Stickney was, thanks to God, yet among the living members of the U. S. V. M. A., and with the good constitution he had, there was no rea-

son to suppose that, notwithstanding his age, he would not stay long with us; but the Great Ruler of all things decided differently, and a few days before accomplishing his 75 years, he died in his native place, Boston, at his *alma mater*, where he graduated in 1858.

From one of his intimate friends we have received the following :

"Here was a character, to contemplate and understand which would require greater capacity than I am possessed of. He was one of the fairest intellectual attainments, of the deepest and largest beauty of character; a thinker, a reasoner, a fair opponent, a gentleman—a whole gentleman.

"During 40 years that I was accustomed to meet him daily, I never found him other than brotherly, fatherly. Among my recollections of occasions in which we both participated, and of all our associations together, I find in his memory extreme joy, a source of satisfaction. As a scholar, a great thinker, in the ordinary course of my life I have failed to find a superior. He was modest and yet forceful, unassuming and yet confident, generous and self-sacrificing beyond measure."

A student and friend to the last moments of Josiah Stickney, writes of him :

"Original in a very marked degree, his mission was to aid the profession, and with her, in spite of his failings, he never was at odds. A tireless practitioner and close student to the end. The last remarks he made to me in the hospital, the Sunday before he died, were: 'Interesting cases come to us about the time we are ready to die.' He was studying and thinking of the interest of his own case.

"Stickney was bitter against opportunism, distrustful of all that were patronizing; he was caustic and quick in his replies, and never given to idle talk. Honest with himself, he commanded the respect of all, even of those who disagreed with him.

"I heard him remark on different occasions: 'If you accept a position or a case, you are supposed to know about it. D—

the man whose opinion is biased by his followings. Did you ever see a similar case? No! Why in h— do you not read your text books?"

Such expressions of appreciation from friends tell much of the value of that old veterinarian.

(*To be continued.*)

TO STUDY TUBERCULOSIS—VETERINARIANS TAKE A PROMINENT PART.—At the recent annual meeting of the American Medical Association, which convened at the United States Hotel, Saratoga Springs, on June 10, in the "Section in Hygiene and Sanitary Science," Dr. D. E. Salmon, of the Bureau of Animal Industry, presented a paper on "Recent Investigations Concerning the Relation of Human and Bovine Tuberculosis"; Dr. R. R. Dinwiddie, of Fayetteville, Ark., also dealt with the same subject under the title of "The Intertransmissibility of Human and Bovine Tuberculosis: A Review of the Experimental Evidence," while the theme was further elaborated by Dr. M. P. Ravenal, of Philadelphia. At the close of the discussion a resolution was passed suggesting that the association petition the federal government to appoint a commission, similar to those appointed by European governments, for the purpose of studying and investigating the whole subject, with a view to the discovery of the best means of preventing the spread of the disease in man and animals.

STOCK DYING FROM LACK OF WATER.—Dr. Leslie Allen, inspector on the staff of Col. Albert Dean, live stock agent in charge at Kansas City for the Bureau of Animal Industry, has just returned to Kansas City from a trip into New Mexico and Arizona, whither he had journeyed to inspect cattle sold for shipment North. He states in a published interview that water has been so scarce there for a long time that cattle are dying by hundreds for want of it and that all those able to do so have moved their stock out of the stricken region. This region includes, according to Dr. Allen, the southern half of Arizona, the southern half of New Mexico and the old Mexican States of Chihuahua and Sonora. In parts of this district, he says also, sheep are dying by thousands and it is well known that sheep can live on much less water than cattle.—(*Breeder's Gazette*, June 4.)

THERE are 38,000,000 horses of all kinds in Russia.

A BACILLUS LIABLE TO BE MISTAKEN, MORPHOLOGICALLY, FOR THE BACILLUS OF TETANUS.

BY FRED F. BUSHNELL, B. AGR., WINSTED, CONN.

The morphology of the bacillus of tetanus has been quite generally considered sufficiently characteristic to be of specific value. Because of its anærobic nature, its isolation in pure culture is attended with much difficulty, a condition which has doubtless heightened the importance of its morphology, in its specific determination. As in practice the diagnosis of tetanus is usually made from the appearance of the bacillus in cover-glass preparations, made from the scrapings of wounds suspected of being infected; the finding of pseudo-tetanus bacilli introduces an element of uncertainty in the interpretation of the appearance of organisms, morphologically like *B. tetani*.

In 1893, Sanfalice described a tetanus-like bacillus which he found in earth. Kruse describes a bacillus under the name *B. pseudo tetanus aerobius*, morphologically like that of tetanus, which he obtained by Kitasato's method, from a case of tetanus in man. Von Lubiniskii isolated from an abscess an organism which morphologically resembles that of tetanus, and more recently a tetanus-like organism was obtained from a blank cartridge wound from a patient in the Massachusetts General Hospital, by Bain.

In the fall of 1901, I found in the pus discharging from the lesion in a case of poll-evil a bacillus which on account of its morphological resemblance to *B. tetani* seems to be worthy of a somewhat careful description. The patient from which this organism was obtained was a brown mare, weighing about a 1000 pounds. She was presented at the college clinic for treatment for a fistula upon the poll. The lesion was apparently of long standing, as pus of a dirty white color and of a very foetid odor was discharging from it.

There were a number of scars about the fistula, showing that the animal had previously been operated upon, apparently with-

out success. After the part had been thoroughly washed with soap and water, and carefully disinfected with sublimate solution (1-1000) a small piece of skin was taken from the external opening of the fistula, placed in a sterile test tube and taken to the laboratory, where tubes of bouillon were inoculated and agar plate cultures were made. On the following day the cultures contained a micrococcus, a streptococcus and a slender rod shaped organism with a polar spore, which at the first glance appeared to be that of tetanus. As it seemed to be a very unusual place to find the tetanus bacillus and as the patient improved very rapidly, showing no symptoms of tetanus, it seemed desirable to isolate the organism and to determine its characters.

This bacillus, which, in the beginning, was thought to be anærobic, grew very rapidly under ærobic conditions in the presence of the other organisms found associated with it in the lesion. Under these conditions, spores were produced in from 24-36 hours. When it was first isolated in pure culture, it failed to grow in ordinary media, under ærobic conditions, however, after inoculating a tube about two-thirds filled with liquid blood serum, the growth took place after several days. The fact to be noted here is, that while the organism is almost a strict anærobe, yet under certain conditions it will multiply in the presence of oxygen.

In isolating this bacillus, plate cultures in agar were made without success, on account of a spreading growth, which covered the medium. 'Liborius' method of cultivating anærobic organisms was tried in agar, also cultures were heated to 60-65 and 70° C. for 15 minutes, but without success, as it did not destroy the accompanying bacteria. Finally as a last resort a guinea-pig was inoculated subcutaneously with one cubic centimeter of the original bouillon culture; the animal died after 21 days. Cultures were made from the liver, spleen and heart blood, in tubes of bouillon and liquid blood serum. The organism appeared only in the tube of blood serum, which was inoculated from the liver, and upon examination it was found to be in pure culture.

Morphology.—A very slender bacillus, with rounded ends and varying in length from 2.4μ and 0.5μ in breadth. It may appear as a single rod, in pairs or in threes. In young cultures it is actively motile. It produces a polar spore, which is slightly more oval and larger than that of the bacillus of tetanus. When first isolated the spores developed in from 7-10 days, but after several generations on artificial media they appeared regularly in from 48 to 72 hours. No capsule was observed. It stains readily with carbol fuchsin, but not so easily with the other bacterial stains, except, perhaps, in very young cultures. It decolorizes when treated after the Gram method. The spores survive heating at 80° C. for 45 minutes. They are destroyed when heated at 100° C. for 20 minutes. It is an anaerobe but a facultative aerobe, growing rather slowly in the incubator at the temperature of 37° C. in ordinary tubes of agar and bouillon, while in media containing one per cent. glucose, the growth is much more rapid.

Agar.—In stab cultures, after 24-36 hours, a minute, grayish white growth develops along the needle tract and gradually extends laterally into the medium, presenting a very irregular border, which imparts to the medium a hazy appearance. The growth is more vigorous in agar containing one per cent. glucose. On agar a grayish white growth appears. In deep cultures (Liborius' method) containing one per cent. glucose numerous whitish colonies develop. When isolated, the colonies are round, with an opaque center and presenting a fuzzy and not well defined margin. Under the microscope the colonies are round and have a dirty whitish color, granular, with a dark center and poorly defined margin. The isolated colonies in agar plates vary from 1-2 mm. in diameter; they present a fuzzy margin, are friable and can be easily separated from the medium. No odor was detected.

Gelatin.—In this medium the growth is feeble, appearing in the stab cultures in from 7 to 10 days. The growth appears along the needle tract as minute, spherical, white colonies, which seem to be distinctly separate from each other.

There is no softening or liquification of the medium.

Blood Serum.—On the solid medium, the growth is confined beneath the condensation liquid, appearing as a dark greenish color, which has a slight tendency to soften the medium. In the liquid serum the growth is very feeble and no marked change in appearance occurs, except, perhaps, it turns to a slightly darker color. A sediment appears in the bottom of the tube.

Potato.—The growth on this medium is feeble. It is non-viscid, moist, glistening and of a dirty white color.

Bouillon.—In the course of 36 to 48 hours, the alkaline bouillon becomes faintly clouded with flocculent masses held in suspension. A white viscid sediment appears at the bottom of the tube. A very delicate pellicle is formed upon the surface in from 56–72 hours later; the surface pellicle breaks up and settles and a ring of whitish deposit is found on the inside of the tube at the surface of the medium. The chemical reaction of the bouillon remains unchanged and no odor was detected.

Effect on Sugars.—In the fermentation tubes containing glucose, lactose and saccharose bouillon, there is a moderate growth; the bouillon becoming faintly cloudy in both the closed branch and the open bulb, with a marked acid reaction in each. Gas is not produced.

Milk.—There is no precipitation or coagulation of the casein. There is no change except in the chemical reaction, which becomes more acid.

Indol.—No indol reaction was obtained.

Pathogenesis.—Although the guinea-pig that was inoculated from the original bouillon culture died after 21 days, subsequent inoculation from a pure culture gave negative result.

For convenience in comparing the properties of the bacillus of tetanus, the pseudo-tetanus bacillus of Bain and the organism which I have described, I have arranged them in like order in the following table:

B. Tetani.	Pseudo-Tetanus (Bain).	Tetanus-like bacillus from pus (Poll evil).
1. Slender rod shaped organism with rounded ends. 4.5μ in length and 0.4μ broad.	1. A slender bacillus with rounded ends, variable in length and about 0.5 thick.	1. Slender rod-shaped bacillus with rounded ends, in length from $2-4\mu$, about 0.5μ thick.
2. Motile though not actively so.	2. Non-motile.	2. Actively motile in young cultures.
3. Obligate anaerobe.	3. Obligate anaerobe.	3. Anærope and facultative aerobe.
4. Spores are not killed by exposure of one hour at 80°C .	4. Spores survive heating at 80°C . for 30 minutes.	4. Spores are destroyed at 100°C . for 20 minutes.
5. Liquifies gelatin slowly.	5. Does not liquify gelatin.	5. Does not liquify gelatin.
6. Does not grow well on blood serum, occasionally reported to liquify serum.	6. Grows readily on blood serum and the medium is slowly liquified and a peculiar foul odor is developed.	6. Does not grow readily in blood serum and does not liquify it.
7. Stains with ordinary anilin dyes and does not decolorize by Gram's method.	7. Stains readily in young cultures and decolorizes by Gram's method.	7. Stains well with carbol fuchsin, but not readily with other stains except in young cultures. It decolorizes by Gram's method,
8. Kills guinea-pigs in 24-36 hours.	8. Does not kill guinea-pigs.	8. Does not kill guinea-pigs.
9. Gelatin is slowly liquified and a small amount of gas is produced.	9. Produces small amount of gas in glucose bouillon.	9. Ferments sugars, forming acids but not producing gas.
10. Grows best in medium of a slightly alkaline reaction.	10. Grows best on slightly acid media.	10. Grows best in acid media.
11. Spores are formed in 30 hours. Spores are spherical.	11.	11. Spores are formed in from 56-72 hours. Spores are slightly oval and larger.

From the description of the various properties of the bacillus which I have described, it will be observed that it differs from the bacillus of tetanus in certain very important properties and characters, namely, (1) it is facultative aerobe; (2) it is actively motile in young cultures; (3) it does not liquify gelatin; (4) it does not take the Gram stain, and (5) it is non-pathogenic for guinea-pigs. Although morphologically it resembles the bacillus of tetanus, the elongated and slightly pointed form, which its spores usually assume, together with its cultural differences and non-pathogenic effect on guinea-pigs are sufficient to differentiate it from *B. tetani*.

The close resemblance which exists between these organisms, however, emphasizes the fact that in certain cases it may be impossible to make a positive diagnosis of tetanus from a microscopic examination. In cases of doubt, a careful examination of the cultural and pathogenic properties of the suspected organism must be determined, otherwise a serious error may occur.

This organism was found in a somewhat interesting manner in a second case of inflammation. One of the students working in the laboratory found his bouillon cultures to be contaminated with a tetanus-like organism. Upon making a careful inquiry into its probable source I found that the student having the contaminated culture was at the time attending a case of metritis in a mare, a patient in the college hospital. Further observation showed that there was a discharge from the vagina, from which cultures were made. These contained with other bacteria an organism which morphologically could not be distinguished from the one which I had previously isolated from the case of poll-evil. The fact suggests that probably this organism is quite widely distributed.

"FASHIONS IN HORSE BONNETS" was the title of a large illustration in the New York *Herald's* Paris letter of July 5. The familiar types seen in the streets of Gotham in the torrid parts of summer seemed to be the rage among the Parisian modistes.

“PESTE.”*

BY COLEMAN NOCKOLDS, M. D., V. S., VET. 1ST-CLASS, U. S. ARMY,
BATANGAS. P. I.

During the month of April, because of frequent reports, I was ordered by my regimental commander to investigate and report upon a disease that existed and was decimating the cattle and pigs on the island of Maranduque, eight hours' journey by steam launch from this post. After reporting to the commanding officer of the 30th Infantry, stationed at Boac, one of the garrisons on the island, and obtaining ponies, native guides, provisions, etc., I proceeded to visit the different haciendas around the coast and in the interior. To my inquiries it was always the same answer : “Si, Señor, I had plenty of cattle, but they are all dead now.” One man, who counted over two thousand a month before, could now count twenty ; another who had fifty, now had but one left. The barrio of Garsau, which boasted of having five hundred fine working caribou and oxen, had just four left. As for sick animals, there were none ; the plague had come and gone ; what few cattle there were left were either rendered immune by a previous attack or had recovered. Nothing that I had ever seen resembled the existing conditions as much as the drought of 1890 in Western Texas, when one could walk long distances on dead cattle that had died around the dried-out water-holes. One had only to ride to the top of a knoll in Maranduque to see hundreds of dead cattle ; especially were they thick near streams, where the poor fever-stricken beasts had wandered in search of water. The stench in places was unbearable, and it was often necessary to hold a handkerchief over your nose for miles ; the water in all the streams is contaminated ; it smells bad, and is full of hairs ; even after seeing some boiled, and putting in lots of coffee, I vomited and was sick for twenty-four hours from drinking it ; yet the natives have to use it. Cocoa-water furnished me with drink during the rest of the time I was away from post. Unfortunately

* Tagalog for the disease described.

I was unable to see a single sick animal during the two weeks there, but have no doubt from what the natives said that the trouble was rinderpest. The ultimate results of the outbreak are of course no meat supply ; but, what is far more important, loss of the only beasts of burden that the Filipino has. The cattle and caribou are used to till and plough the rice fields and draw their carts ; the carts are pulled by men, and the fields are untilled, cutting off the food supply to a people who are already much impoverished by a long continued war, and now cholera has stepped in to collect its tribute. Upon my return to Batangas Province, I found that rinderpest had broken out near the post at which my regiment is stationed ; it is three years since it decimated the animals here before. At present it exists in the provinces of Batangas, Cavité and Tayabas, and perhaps up north. It also exists in the islands of Mindoro, Mindanao and Samar and all through the south part of Luzon.

I have been able to observe animals from the time of exposure until death ; so will briefly run over the chief facts.

I believe the period of incubation to average about one week, and its course about the same length of time. Some animals die in a few hours, but they are exceptions, as the average die in about seven days after the acute symptoms manifest themselves. Among animals that have died during this epizoötic are cattle, caribou, pigs, sheep, and goats. I also saw a number of dead deer in Maranduque, which no doubt succumbed to rinderpest. A large number of chickens have also died, but whether due to this disease or some other I do not know. About one week after exposure there is a marked rise of temperature, 42-43 C. The animals refuse food, but are very thirsty ; there is constipation, followed by profuse diarrhoea, which is often bloody ; the pulse is small and fast. Debility comes on quickly, and the animal lays down most of the time. The coat is dull and bristling and the ears hang down. Muzzle dry, rumination stopped, and back arched whilst standing. There is a sticky, purulent discharge from the eyes and nose, a frothy discharge from the mouth. The mucous membranes

of the mouth, nose, anus and vagina are inflamed and blotched with red swellings or ulcerations. The cattle and caribou lose their hair about the fifth or sixth day. All the usual signs of an intense fever are apparent. Pregnant females abort. In some cases the brain is affected and the animals become violent as if mad. The symptoms are much the same in the pig and other animals. Those that recover are evidently immune from other attacks.

From a number of cultures which I made from blood, fluid in the abdominal cavity, spleen, liver and intestines, the appearances are as follows :

Agar-agar.—In 24 hours a growth of white flakes, more pronounced on the surface than down the track of the needle, resembling pieces of felt, clearly separated from each other. In 48 hours those upon the surface turn an orange yellow. Under the microscope these are seen to contain spores of an oval shape, often in pairs and chains.

Upon potato the growth is whitish at the point of contact surrounded by a thick slate-colored mould, plainly visible after six hours, and spreading very quickly. This contains bacilli single and in chains from $\frac{1}{2}$ to $1\frac{1}{2}$ micrometers in length and $\frac{1}{8}$ in width, all encapsulated* and some containing what are evidently spores.

On coco media in 24 hours a whitish growth containing black specks; in 48 hours this growth sinks to the bottom ; this contains bacilli resembling those found on the potato. All stained easily with simple stains.

Because of the climate was unable to use bouillon.

Two horses that were inoculated with blood and culture showed no symptoms of disease.

Autopsy.—Macroscopically the organs that are most conspicuously altered anatomically are the liver and rumen. The former is of light red color (brick) and extraordinarily soft, resembling pulp. The gall-bladder is full of thin bile, and the latter, the mucous membrane of which almost falls off by its own weight when that organ is turned inside out, leaving red

ulcerated patches ; in rare cases the spleen is enlarged and its contents are softer than normal. The intestinal tract shows more or less ulcers in its entire length ; there are dark spots on its serous membrane. The buccal membrane, tongue, and mucous membranes of the nose, vagina, and rectum are ulcerated ; these ulcers are often covered with a greyish membrane. The glands of the stomach and intestines are swollen and the rectum bulges. The other organs, as the heart, kidneys and lungs, show the usual characteristics caused by intense elevation of temperature. The pericardium is often plum-colored. The thighs are covered with faeces, blood, and a peculiar purulent discharge from the rectum, and a frothy substance, full of cheesy-looking flakes, block up and exude from the nostrils and mouth.

The native treatment consists of cutting off the ears close to the head. Among others that I heard of carrying out the treatment of rinderpest was one hospital corps man recently discharged, who was selling bottles of medicine at \$10 each. One Manila veterinarian was sending out boxes of pills, very much resembling aloetic balls, discarded because of becoming hard, at \$10 a box.

The commanding officer at Boac informed me that a man who was employed by the quartermaster as a veterinarian was sent down from Manila to investigate for the civil government just lately that had been employed as packer and scout, a calling which he had followed for many years, and which had earned for him the nick name of "Wild Bill." I did not hear the result of his investigations. The same officer related that an acting assistant surgeon, U. S. A., had manufactured a serum which he sold at one hundred dollars a bottle, to prove the efficiency of which he inoculated six cattle, which were healthy, and in a district that had hitherto been free from disease. Not only did the six die, but the whole district became infected with rinderpest ; yet, many natives that had the money, bought ; but then the native Filipinos are ready to buy almost anything that is American, and they make typical victims for sharks.

Personally I have done nothing more than investigate as or-

dered, and with making my official report, in which I have asked that this matter be brought to the notice of the proper authorities, whom I presume to be my confrères of the A. B. I. My duty is done. I sincerely hope something will be done soon for the sake of the people, who are, and will necessarily suffer severely from the effects of this dread calamity, and under the existing conditions naturally look for the Americans to help them out in this disease of cattle, as they have done with small pox among themselves.

THE first sealed thermometer was made some time prior to 1654 by Ferdinand the Second, Grand Duke of Tuscany; he filled the bulb and part of the tube with alcohol, and then sealed the tube by melting the glass tip. There appears to be considerable doubt as to who first employed mercury as the thermometric liquid; the Academia del Cimento used such an instrument in 1657, and they were known in Paris in 1659. Fahrenheit, however, appears to have been the first to construct, in 1714, mercury thermometers having trustworthy scales. The use of the boiling point of water was suggested by Carlo Renaldini in 1694.—*Engineer.*

WAS A JACKASS.—Here is a true story. An amateur was induced to place a ten-dollar bet with a bookmaker, and won \$25. This pleased him so much that he placed the \$25 with the bookmaker on the next heat. He won again. The third heat he played all his roll, amounting to \$60 or \$70, and lost, whereupon he fell over in a dead faint. His brother, who chanced to be present, ran for a doctor, and asking him to make haste, as he imagined his brother was dying. “I am a veterinary surgeon,” the doctor said. “You are just the man I am looking for,” the man replied excitedly, “as my brother is a jackass.”—(*Spirit of the Times.*)

JOHN HAINES, in *Horse-Shoers' Journal*, says 99 out of every 100 balky horses can be started by simply raising a foot and with a hammer give a light tap to each nail-head and then a smart rap on the frog; put the foot down quickly, and chirp to the horse. The driver must keep the lines taut, and not pull or jerk the horse.

DO NOT PUNISH YOUR HORSE unless you are sure that he deserves it. If you have the least doubt whether he deserves it or not, give the horse the benefit of the doubt.

AN EXPERIENCE WITH NODULE DISEASE OF SHEEP.*

BY DR. M. H. REYNOLDS, EXPERIMENT STATION, ST. ANTHONY PARK,
MINN.

History.—In the fall of 1900, Mr. A. W., a farmer in the western portion of the state, had a nice flock of 260 sheep, and plenty of winter feed. The summer pasture had been short and water somewhat scarce, so that the sheep were compelled to feed very close to the ground and to drink from a pond which became very stagnant. This pond receives drainage from the barn yard and also to some extent from the pasture, a significant fact in view of later developments. The sheep were somewhat crowded while in the barn, but had plenty of good feed and plenty of yard room.

During the winter the flock became unthrifty; some individuals grew gradually thinner and weaker until a total of 61 died in this way during the late winter and early spring. As soon as the grass came and the sheep were turned out they began to do better and the disease seemed to disappear. The feed during the winter had been nice, bright millet hay, fine wild hay, good corn fodder, and during the latter part of the winter the sheep had some screenings and some corn, but they did poorly in spite of good feed, and, of course, the owner had a poor lambing season in the spring, which added materially to his loss.

In the fall of 1901, Mr. W.—had about 240 sheep in this flock, apparently in fairly good condition. During the late winter the flock became unthrifty again. The barn had been enlarged during the preceding summer and the sheep were no longer crowded. There was plenty of choice millet hay, good corn fodder with some nubbins, nice bright wild hay, all of which were fed generously, together with some screenings during the latter part of the winter and early spring. Some of the animals grew very thin and weak, and finally they began to die as during the previous winter. A total of 55 were lost in this way up to the time of my visit, a large proportion of them dur-

* Reprinted from *The Farmer*, Minnesota.

ing March and the early part of April. During the previous summer the pasture had been good; but the sheep had been allowed to drink from the stagnant pond already mentioned as receiving drainage from the barnyard and to some extent from the pasture, over which the affected sheep had grazed.

Early in April the writer visited Mr. W—'s farm, and found the entire flock in very unthrifty condition, but with every evidence of good feed and good shelter. A few hungry little lambs were following their apparently half-starved mothers, and the general outlook was not encouraging. Two animals were selected as being typical of those that had died, and were examined post-mortem. The intestines in each case were found thickly studded with characteristic nodules of what is known as nodule disease.

Cause of the Disease.—The disease is caused by a minute round worm (*Oesophagostoma Columbianum*). The adult worms described are about half an inch in length and may be found in the intestines, and particularly in the large ones. The immature forms vary from 1-100 to 1-6 of an inch in length, depending on the age and stage of development, and are found inside of the little nodules which constitute the most prominent feature of the disease seen on examination post-mortem. The life history of this parasite is now quite well understood, although the disease has been recognized but a comparatively short time. The eggs are laid by the adult female in the intestine. The eggs soon hatch, and the embryo worms pass in some way through the internal lining of the intestine, and becomes embedded there, giving rise as foreign bodies to the little tumors or nodules which nature throws around them, evidently in an attempt to fence them off. They must cause some irritation as foreign bodies, and this irritation will account for the little tumors which are found on the side of the intestine.

Some of the adult worms pass out with the manure, and thus infect the pastures and feed yards, ponds or sluggish streams which receive their drainage, as in the outbreak described in this article.

The extent of injury to the individual sheep depends mainly upon the number of worms present, and the condition of the sheep as to vitality and resisting power. There may be something of an inflammation of the bowels while the young worms are passing through the lining of the intestine, but the main injury is that of starvation. So large a portion of the bowel is diseased by the parasites when they are present in great number that there is not enough healthy tissue to absorb the food material. A badly infested sheep may have plenty of good food and yet be too weak to eat it, or if able to eat, he may still be starving because the intestinal wall cannot take up the food that may be ready for absorption.

Older sheep suffer worse, as a rule, because the longer an infected animal lives the worse the intestines become diseased by the parasites.

Diagnosis can only be made by finding the characteristic nodules in an examination of the dead animal, for sheep infested with some other diseases, especially parasitic diseases, show similar symptoms and conditions during life.

Treatment.—Prevention.—It is probable that but little can be accomplished by medical treatment, because the worms, during a large part of their life history, are safely walled up in these nodules and beyond the reach of any medical agent. In dealing with a serious outbreak of this disease it should be remembered that infested flocks usually do fairly well during the summer and early fall months. If a flock is badly infested with nodule disease, it will generally prove good management to nurse the flock through until spring, then depend on getting the sheep into shape for market during the summer and sell out for butcher stock in the early fall. Such sheep are entirely fit for food purposes when in good flesh. A new start may then be made with a good prospect of success if certain care is had to avoid another general flock infection.

The new sheep should be purchased from a flock that has been thrifty during two previous late winters and early springs, and they should be kept for two seasons on some other pasture



than the one previously used. It will be better still if the flock can be kept part of the season on pasture and part of the season on plowed corps, *e. g.*, rape, sorghum, field peas or meadow land that has not recently been used for sheep pasture. The new flock must not be allowed to drink from any pond or sluggish stream that has received drainage from the infested pasture or barn yard.

With a view to preventing this and other parasitic diseases in the future, the flock should not be kept too long on one pasture, but should be moved about from pasture to pasture; and from pasture to stubblefields, cut-over meadow, rape, etc. Sluggish streams and ponds should be regarded with suspicion always.

It is possible to practically rid a flock of nodule disease by following this course of shifting the flock about for several years, plowing up pastures occasionally and using plowed crops, but in most cases, with the exception of valuable sheep, particularly breeding flocks, it will usually be found more satisfactory to change the entire flock on the plan suggested.

CALCULI, AND A NEW MODE OF OPERATING.

By J. F. BUTTERFIELD, V. S., S. MONTROSE, PA.

Presented at the Annual Meeting of the Pennsylvania State Veterinary Medical Association, March 4 and 5, 1902.

Calculi are concretions which may form in every part of the animal body, but are most frequently found in the organs that act as reservoirs, and in the excretory canals. They are met with in the joints, biliary ducts, digestive passages, lachrymal ducts, mammae, pancreas, pineal gland, prostate, lungs, salivary, spermatic and urinary passages. The causes which give rise to them are obscure.

Those that occur in reservoirs or ducts are supposed to be owing to the deposition of the substances which enter into the composition of the fluid as it passes along the duct; and those which occur in the substance of an organ are regarded as the product of some nutritive irritation. Their general effect is to irritate as extraneous bodies the parts with which they are in contact; and to produce retention of the fluid whence they have been formed.

The symptoms differ, according to the sensibility of the organ, and the importance of the particular secretion whose discharge they impede.

Their solution is generally impracticable. Spontaneous expulsion, or extraction by surgical aid, are the only ways of getting rid of them.

Arthritic Calculi, concretions which form in joints. Similar calculi are found in the ligaments, and other parts. They sometimes cause rheumatic lameness and excessive pain. They are composed of uric acid, soda and animal matter.

Biliary Calculi are most frequently found in the gall bladder (in those animals which have one), in others in the substance of the liver or in the branches of the ductus hepaticus. The causes of biliary calculi are also very obscure. They are usually composed of cholesterine and the yellow matter of the bile. They may occasion violent abdominal pain. In our pa-

tients we would be unable to make a correct diagnosis. Abscesses, biliary fistulæ, and fatal effusions into the peritoneal cavity may follow.

Calculi Lachrymal sometimes, but rarely, form in the lachrymal passages. They may occasion abscesses and fistulæ.

Calculi of the Mammæ have been found in this organ, of a yellowish white color, having the shape of the excretory duct. They are liable to cause abscesses, and may be removed through the abscess:

Calculi of the Pancreas.—These are but little known. They are supposed to resemble the salivary.

Calculi of the Pineal Gland.—No phenomena announce their presence during life. They are composed of phosphate of lime.

Calculi Preputial are composed of sabulous and exfoliated matter. They may occasion symptoms similar to urethral and vesicle calculi. Have seen them in oxen as well as in the male equine. They should be removed with the oiled finger.

Calculi of the Prostate are usually composed of uric acid. Symptoms common to those of calculi of the bladder are likely to develop.

Pulmonary Calculi are usually formed of carbonate of lime and animal matter. They are sometimes met with in the dead body, by butchers, and in autopsies, without seeming to have produced unpleasant symptoms during life, or they may cause symptoms of phthisis; at other times they are expelled spasmodically.

Salivary Calculi.—Concretions usually formed of phosphate and carbonate of lime. They are developed in the substance of the salivary glands or in their excretory ducts. In the first case they may be mistaken for a simple swelling of the gland, in the second they may generally be detected by the touch. They should be extracted by incision in the interior of the mouth. If taken from the outside it would occasion a fistulæ that it would be difficult to close. The writer removed this specimen, weight 4 oz., from a grey mare belonging to a Mr.

Vail. It was situated in Steno's duct, near the entrance to the mouth. With a mouth speculum to hold the mouth open and a small scalpel, I was enabled to remove it readily.

Calculi of the Stomach and Intestines.—Gastric calculi could not be formed in the stomach itself on account of the acid reaction of its contents and because of the short time the alimentary matter remains there. (In ruminants it may be otherwise.) The anti-peristaltic movements of the intestines bring them back to the stomach from the intestines. Calculi are ordinarily formed in the large intestines, colons, rarely in the cæcum. The causes which give rise to them are ingestion of hair during shedding, or feeding ripe hairy plants, as clover, millet, soja beans, etc. Also feeds rich in magnesia and lime phosphates. Intestinal concretions vary in their composition. They are light, hard and very foetid. Whilst they do not obstruct the passage of the alimentary mass they produce no unpleasant symptoms. At times they may be diagnosed by examination per rectum. The violent symptoms occasioned by them are frequent colics, of a periodic character, of a more rapid course than is due to accumulation of alimentary matter in the intestinal reservoirs. Treatment.—In desperate cases laparotomy may be attempted. A case we diagnosed as intestinal concretion recovered after several months without treatment.

Urinary Calculi are concretions which form the crystalizable substances in the urine, and are met with in the whole course of the urinary passages. Their causes are but little known. They receive their name from the location in which they are found—as renal, calculi of the ureters, prostate, vesicle, and urethral calculi.

Renal and Calculi of the Ureters occasion similar symptoms, and cause violent pain at times. Urethral and vesicle calculi are the most common, and are more readily diagnosed, and may be extracted by surgical aid more successfully than most other forms of calculi. Of the urethral calculi the obstruction which they cause to the passing of the urine, the hard tumor, and the noise occasioned when struck by a sound or catheter indicates

their presence. They are removed by forceps or incisions.

Of the *Vesicle Calculi* they sometimes proceed from the kidneys. Most commonly they are formed in the bladder itself. Frequent attempts to pass urine, sudden stoppage to its flow, and bloody urine, are the chief phenomena that induce a suspicion of their existence. We cannot, however, be certain of this without an examination per rectum.

There is no such thing, probably, as a medical solvent. A surgical operation is applicable.

I will report a case of vesicle calculi that I had in my practice and our mode of operating for it, original with me.

On April 18th, 1900, Master Winfred Liffany, of Harford, Susquehanna Co., Pa., brought to my place, a white pacing gelding, very handsome, about eight years old, and weighing about 1000 pounds. He was dribbling urine slightly and attempted to urinate every few minutes. He was slightly run down in condition. Master Liffany had traded for him only a few days before. Upon rectal examination I found a vesicle calculus the size of a large hen's egg. This was the first and has been the only one I have found thus far. The boy wanted to know if I could remove it successfully. I told him I thought I could, and he left the horse with me. I deferred the operation until April 30th; in the meantime I tried both in New York and Philadelphia to obtain lythotomy forceps from the veterinary instrument dealers, but was unsuccessful. I had by this time decided upon my plan of operation. With the assistance of Dr. J. G. Wilson, M. D., and Druggist Sidney Jencks, of Montrose, and my man of all work, we cast the horse with the "Conkey" harness, having previously dieted him on bran mashes for twenty-four hours. I then made an entrance to the pelvic region of the abdominal cavity the same as we do in the operation for cryptorchids, as follows: With an ordinary castrating knife I made an incision in the scrotum large enough to pass my hand. With my hand I broke down the connective tissue and fascia, and with a slight rotary movement, I passed my hand right up into the inguinal region, and when I had

reached about two inches above the ring, I broke through the peritoneum, which brought me in the pelvic cavity near the bladder. I located the bladder at once and seized it with the calculus and brought them out of the opening into view. Held them while my assistant, Dr. Wilson, with suitable catgut, passed sutures in the muscular coat of the intending opening into the organ, leaving a loop above the point to cut through; being careful not to pass the needle through the mucous coat of the bladder. With an ordinary scalpel we cut through muscular portion under the loop of the catgut left for the purpose. We now shoved the muscles one side as far as we could, and cut through the mucous coat and removed the stone here shown (weight 5 oz.). We now sutured the mucous coat with fine catgut, one-fourth of an inch apart, and drew up the sutures in the muscular portion and tied them. We now let the organ return to its normal position and allowed the horse to regain his feet. He manifested pain for a couple of hours and strained, passing a little blood.

The next morning I let him out to eat a little fresh grass, and watched him for half an hour, when he urinated very naturally and did not strain at the close as he had done when carrying the calculus. I let him out for a little exercise and to eat the fresh grass every day. He improved rapidly. Passed a little pus at times. Sent him home May 14th, just two weeks after the operation, a distance of fourteen miles. About four weeks from the time of the operation he strained and passed a little pus, but it lasted only two or three days, probably due to the sloughing of the sutures in the mucous coat of the bladder.

The horse was allowed to run at pasture for about three months. He gained in flesh and is in fine condition, and has been perfectly healthy since, doing all kinds of work. I see him frequently when in that vicinity.

RHYTHMIC, a blind trotter, won the Merchants' and Manufacturers' Stakes for the 2:24 Class, at Detroit, Mich., July 16, the best time being 2:11 $\frac{1}{2}$. The horse never started in a race before, and won in hollow fashion.

PNEUMONIA AND ITS TREATMENT.

By J. D. FAIR, D. V. S., BERLIN, OHIO.

Read before the Ohio State Veterinary Medical Association, Jan. 14th, 1902.

Croupous, exudative lobar diffused pneumonia is one of the very common diseases which we are called upon to treat, especially in a feeding district, where colts and thin horses are shipped in and put up in good barns and prepared for the Eastern market. The pathology, etiology and symptoms of pneumonia taught by the various teachers and different authors are generally accepted and understood by us all. But let us hope that some scientist, microscopist or pathologist will, in the near future, discover some source of prevention or some method of treatment that will shorten the course of the disease and lessen the percentage of fatality. I believe that pneumonia is an infectious disease, due to some virulent poison (a pneumococcus), and under certain climatic influences they become very numerous. Horses, as well as people, breathe in this poison, and if any subject is caught below par, nature can no longer resist the poison, hence the irritation, next there is a determination of blood to the lungs, followed by a chill and the usual constitutional symptoms of the disease.

This brings us down to the practical part of the disease, namely, the diagnosis and treatment.

The diagnosis is simple, but to recognize and differentiate between some of the most serious complications early in the disease is very important. Knowing the results of these complications modifies the treatment and largely assists us in making our prognosis. I have adopted a course of treatment for a number of years and I consider it very satisfactory. I modify my treatment so as to meet the various conditions and complications as they may arise during the course of the disease: (1) The preliminary treatment, such as placing the patient in a roomy, clean box-stall, away from other horses, properly ventilated, the body temperature to be regulated by means of friction

and proper clothing. This is observed by us all. I think medicine should be administered every three hours, day and night, and the patient should be visited at least once every twenty-four hours. I am desirous to have my patients eat, and I offer and tempt them with all kinds of food to induce them to eat. I think, if we keep their bowels in good condition, the rule is that they will eat. In the summer I give them grass, green corn, corn-blades. In the winter nice clover hay, corn-fodder in the sheaf set in each corner of the stall. Some horses will eat oats out of a clean tin pan; others will eat bran mash out of your hand, but I find the majority of my patients prefer corn, and I give them all they want to eat. I never allow any refused feed to lie in the feed box or trough; keep everything clean and tidy, and the stall well bedded; fresh water should be offered quite frequently, especially in the summer.

From the preliminary treatment and instructions which I have given, it is understood that I have a case of simple or double pneumonia, and in the congestive stage, with a temperature of 106° to 107° , pulse 84 to 96, respiration 54 to 68. I at once prepare the following prescription:

R Quiniæ sulph.,	ʒ iv.
Hydrochloric acid,	ad q. s.
Nitrous ether,	ʒ ii.
Fl. ex. jaborandi,	ʒ i.
Tr. zingiberis,	ʒ i.
Sp. frumenti, ad q. s. to make	ʒ viii.

R Dovers powder, ʒ vi to ʒ i. Divide into six powders.

To the first powder I add from one to two drachms of aloes and one drachm of calomel. I immediately administer the special powder and one ounce of the liquid preparation, and continue giving one ounce every three hours; with the second dose I give a powder, but from that on a powder every other dose. The object of the special powder is to open up the bowels and liver, and as a rule the bowels will operate all right during the entire course of the disease. By the time I get through with my prescription, I have the owner or attendant to make the necessary preparations to apply a good mustard blis-

ter. I apply it to both sides, and I am not very timid about it. I cover plenty of space and use one pound of good powdered mustard, not ground; always use a good quality. It must be fine, and mix it up rather thin. I apply it with plenty of friction; have a man on each side of the horse, and do it quickly. After I am through rubbing, I cover the mustard with table oil-cloth, with the oil-cloth side next to the mustard. I fold a woolen blanket and place it over the oil-cloth. This is fastened down with two surcingles or straps, one to catch the anterior border and the other to catch the posterior border. Then cover with a large blanket, nicely adjusted to the body.

As a rule, the patient has a little sore throat, and I apply a sharp liniment to the throat.

Many have discarded the idea of punishing a horse suffering with pneumonia by blistering him; but I reason as follows: (1) It irritates the patient sufficiently to cause him to move about and exercise; combine this with the Dover's powder, jaborandi, etc., previously administered, diaphoresis is almost sure to follow. (2) If you have any pleuritic complication, I do believe it will counteract it to a certain extent. (3) After the irritating properties of the mustard subside, then it serves as a poultice, and remains moist and hot continually for three to six days. As long as it is hot and moist under the oil-cloth I leave it alone; I don't remove it.

If I catch those cases soon after the chill I expect the congestion to terminate or give way to resolution in a few days. Sweat your patients; keep the skin active for twenty-four hours, and the temperature will drop, and the pulse will harmonize with the temperature. If the congestion fails to pass off and the lungs become hepatized, then I change the treatment. I endeavor to prevent new invasions. I try to keep up a good strong circulation. The heart is the principal thing to care for; build up and stimulate the patient in general, and this I do as follows:

R Quiniæ sulph.,
Acid hydrochloric,

ʒ vii.
ad q. s.

Sp. nitrous ether,	ʒ ii.
Sol. strychniae, 1 gr. to	ʒ ii.
F1. ex. digitalis,	ʒ ii.
Spiritus frumenti <i>ad q. s.</i> to make ʒ viii.	

Give ʒ ii every six hours, and alternate with an emulsion of carbonate of ammonia. This I prepare as follows:

R Ammonia carb.,	ʒ i.
Powd. acacia,	ʒ ii.
F1. ext. glycyrrhizae,	ʒ ss.
Aqua dest., <i>ad q. s.</i> to make ʒ viii.	

Of this preparation I give ʒ ii every six hours. In this way the patient gets medicine every three hours. I vary those prescriptions to a certain extent; for instance, the patient refuses to take any nourishment, I add to the quinine preparation tr. gentian and tr. ginger, instead of the whiskey. Being alcoholic preparations they would have the same stimulating effects and at the same time act as a good stomachic. If the patient seems to grow weak, and it is a good addition at any rate, add about two ounces of whiskey to each dose, and add this just when you administer the medicine. When the disease is going to run its course, try and prevent new invasions, and this I trust to good nursing and the quinine. The nitrous ether will take care of the kidneys; the digitalis and strychniae will take charge of the heart; the gentian and ginger will look after the appetite, and the carbonate ammonia and whiskey will act as a diffusible stimulant and expectorant.

If the case is complicated with pleurisy, and I can make the diagnosis, or even suspect a case of pleuro-pneumonia, I give them potassii iodide quite early in the disease. This I administer in one-drachm doses, and give it in their drinking water. I believe the alterative and absorbing properties of the potassium iodide prevents effusion and hastens resolution. This should be given between meals or feeds, and always well diluted. Then it does not interfere with digestion.

The most serious complications, such as pleurisy, pericarditis, meningitis, and laminitis, are hard to handle. I try to meet the indications and counter-indications as well as I can.

My experience teaches me that most all those cases die. But in cases of pneumonia, simple or double, even slightly complicated with pleurisy, under good treatment and careful nursing, I think the prognosis is favorable. If the patient commences to take a little feed in about three, four or five days, a little grain, hay, green feed, etc., and the temperature hovers around 104° to 104.5° , pulse 60 to 72, good volume, and the patient begins to cough occasionally, I consider that my patient is doing well, and I expect him to make a good recovery. I sometimes get a well-marked case of pneumonia that lies down every night and sometimes during the day. They all recover. But when the temperature rises about the seventh, eighth or ninth day, and the pulse becomes fast, thready and wirey, and the patient refuses feed, suppressed cough, in fact simply grunts, stands in one corner, refuses to take the medicine, those are very unfavorable symptoms, and the probabilities are that you not only have a case of pneumonia, but pleuro-pneumonia, pericarditis, and the patient will soon succumb to the disease.

Under any and all treatment, I occasionally find a patient suffering with a very acute congestion of the lungs and pleura, the congestion being so acute and extensive that they bleed from the nostrils. This I consider a very grave symptom, and my experience teaches me that they invariably die, and in a very short time, 24 to 36 hours.

I was called about two weeks ago to see a good draft colt, six months old; temperature 107° , pulse almost imperceptible and very high. On auscultation, I found the patient had a very acute congestion of the lung and pleura, and it was so extensive that the colt bled from the nostrils. I considered this a very bad case and expected that it would die. I gave it my usual treatment. It was in the evening, and the colt perspired freely during the night, and by the next day the epistaxis ceased, the temperature dropped, the pulse became stronger, the colt began to take a little feed. It passed through the second stage, and when the crisis came resolution set in, and a few days ago I discharged my patient.

Gentlemen, I have given you my actual experience and best judgment for the treatment of pneumonia. I sincerely request you not to be charitable in your criticisms and only hope you will offer many valuable suggestions.

REMARKABLE POST-MORTEM FINDINGS (?) (!).—The following extract from the Colorado Springs *Gazette* of June 5 is enough to take one's breath: "A post-mortem examination of the body of 'Gold Standard,' the racing horse that died at the Roswell track on Friday, revealed the fact yesterday that the horse did not die of gastritis, as was at first supposed. The examination made yesterday led the doctors to believe that the horse died as a result of the windstorm that swept down the track during the race in which 'Gold Standard' competed. There was a heavy clot of blood found in the left ventricle of the horse, and the theory of the doctors now is that the great exertion put forth by the horse in rounding the north end of the track, dead against a violent wind, caused its nostrils to admit such a blast of air that the blood was driven from the horse's head and extremities generally to the heart, where it stopped and formed the clot that impeded circulation and caused death to result. The case is one of the most interesting on record."

IMPROVING THE MILK SUPPLY IN BROOKLYN.—Last winter a movement was set on foot by the Kings County Medical Society to obtain at least a small supply of comparatively good milk which Brooklyn physicians could prescribe for their patients. Several joint meetings of members of the society and large milk dealers were held, and an agreement was reached by which the medical association was to conduct analytical examinations of the milk from certain dairies at regular and frequent intervals, and to furnish label certificates which were to be affixed to sealed bottles which contained milk in which the proportion of bacteria did not exceed thirty thousand to a cubic centimetre of milk. During May the number of these organisms found in some samples of milk was 7,000,000 to a cubic centimetre. In March there were 11,000,000 bacteria to the cubic centimetre, and 43,000,000 were found in a cubic centimetre of one sample of milk that was recently examined. This milk was not sour, and it was on sale in a grocer's store.

THE "SPECIAL VETERINARY TRAIN" over the Chicago, Milwaukee and St. Paul Railway, chartered by Drs. Hughes and Baker, leaves Chicago on the evening of Sept. 1.

ABORTION IN COWS.

BY WALTER S. PHILLIPS, V. S., READING, PA.

Presented at the Annual Meeting of the Pennsylvania State Veterinary Medical Association, March 4 and 5, 1902.

Abortion is an affection which, when it once affects the farmer's or dairyman's herd, causes much vexation and loss.

Abortion so-called, when the foetus or ovum is expelled four or six weeks before the normal period; premature birth occurs when the foetus is advanced enough to live when outside of the mother. Mares are also subject to it, but very rarely.

I notice a great veterinarian has said that abortion is a disease of nervous origin—a loss of equilibrium between the nerves of voluntary and involuntary motion. The direct causes of this state exist in anything that can derange the organs of digestion. Great sympathy is known to exist between the organs of generation and the stomach; if the latter be deranged, the former feels a corresponding influence, and the sympathetic nerves are the media by which the change takes place.

Emanations from putrid animal remains, miasmata, over feeding, derangement of the stomach, stimulating powders containing demulcents and diuretics, blows, excitement, injuries, musty fodder, indigestible food; a low condition of plethora may cause it.

I was called several months ago to a dairy where from twenty to thirty cows (Holstein) are kept, no less than eight or ten cows.

At the last previous visit I found a young bull in the midst of the herd of cows; also an older bull; the younger animal teasing and exciting one cow, then another. I witnessed this, and advised the owner to remove them—to tie up the young animal. This remedied the evil. Have had stagnant pools removed or filled up, which were in the barn yard, and caused abortion for years. After the removal of these pools, the cattle improved right along.

Will relate a case of abortion in a fine setter bitch. The

owner explained the case to me, which occurred about the holidays. Could not account for it ; the loss of pups grieved him, being valuable. No bad odors, no slaughter-house near, nothing to occasion it being detectable. Questioned him, and said : "I suppose you killed a turkey." He said : "Yes, just the day before the loss of the pups." I also asked him, if the animal was present at the time ? "Yes, licked up some of the blood, took head of turkey in her mouth, appeared very much excited ; running up and down the yard. Next day appeared to have some irritation of the vagina, and in a few hours more gave birth to her pups." I think this case worth mentioning.

Preventives.—Isolation, disinfectants and fumigants. Give daily a preparation to each cow with calf, for four or five days. In the majority of cases the placenta must be removed.

HÆMOSTATIC ACTION OF INTRAVENOUS INJECTIONS OF CALCIUM CHLORIDE.—Dr. T. Silvestri (*Gazetta degli Ospedali e delle Cliniche*, April 13th) recommends the intravenous injection of calcium chloride in the treatment of internal hæmorrhages from various sources. The basis of his therapeutic experiments was the work of Sicard, who showed *in vitro* that calcium chloride had the property of increasing the coagulability of blood in cases in which this process was regarded as absent through a deficiency in fibrin-ferment. He employed these injections in four cases. In the first of these, a profuse menorrhagia ceased within three-quarters of an hour after the injection of 150 cubic centimetres of a sterilized solution of calcium chloride of one-per-cent. strength. A second injection of 100 cc. was given, though the profuse flow did not recur. In the second case, a typhoid ulcer ceased to bleed within thirty-five minutes after the injection of 100 cc. In the third case a very profuse pulmonary hæmorrhage in a case of tuberculosis ceased within an hour after the injection of 150 c.c. The author saw the fourth patient after he had suffered from nosebleed for twelve hours. The nose was tamponed and 100 c.c. of the solution were injected. As the hæmorrhage did not cease, a second injection of 150 c.c. was given, effecting the cessation of the bleeding in forty minutes. The median basilic vein was used as the site of the injection and the usual technics was employed. The author believes that calcium chloride is superior to gelatin.

PERITONEAL FILARIASIS OF THE OX.

BY JOHN J. REPP, V. M. D., PROF. OF PATHOLOGY, IOWA STATE COLLEGE, AMES, IOWA.

On several occasions within the past few years I have come into contact with a species of filaria in the peritoneal cavity of cattle. This I have especially noticed in spaying heifers. Some time ago some of these worms were sent to me from an abattoir at Sioux City, Iowa, by an inspector of the U. S. Bureau of Animal Industry for the purpose of identification. I was able to identify this parasite as the *Filaria cervina* (Dujardin). For the purpose of identification I would advise the use of a combination having about the power of a 1-6 or 1-8 B. and L. objective and 1 inch ocular. The anterior and the posterior extremity of the worm may be clipped off with the scissors, mounted on a slide in water, and a cover glass put on. By proper regulation of the light the differential characters may be made out quite readily. It is the male which presents the specific distinguishing features. The fragment of worm must be rotated so as to bring these parts into view. This can easily be done by sliding the cover slip gently in a direction at right angles to the object.

Neuman states that these worms do not play a pathologic rôle. My own observations support this view.

WHAT IS PURE CHLOROFORM?—Thomas D. Luke, M. R. C. S. (*Edinburgh Medical Journal*, June), deals with this subject in a practical manner. He concerns himself more especially with the alcohol factor in the chloroform. This may be pure ethyl alcohol, which has never been anything but pure ethyl alcohol, or it may be methyl alcohol, so dealt with and purified, either before or after the process of chloroform-making begins that it is to all intents and purposes ethyl alcohol freed from methylic impurity. The author considers that even if we employ chloroform prepared from methyl alcohol only partially rectified, it seems highly questionable if the methylic impurity would cause any trouble. He concludes that methylated chloroform manufactured from methylated spirit is as good, as pure, and as safe, as "pure chloroform" prepared from pure alcohol.

REPORTS OF CASES.

"Careful observation makes a skillful practitioner, but his skill dies with him. By recording his observations, he adds to the knowledge of his profession, and assists by his facts in building up the solid edifice of pathological science."

HABITUAL LUXATION OF THE PATELLA AND ITS CURE BY DIVISION OF THE INTERNAL STRAIGHT LIGAMENT.

By J. A. ANGLICKER AND WM. SCHUMACHER, Milwaukee, Wis.

On June 6th a twelve-year-old Shetland pony was brought to us afflicted with habitual luxation of the patella of both legs. The animal, formerly owned by a circus, is a trick pony, and may have contracted the lesion while performing the trick of sitting down with outstretched hind legs. The luxation would occur every time the animal moved after standing still, or when walking very slow, but not when walking fast or when trotting. The right leg appeared to be affected more than the left, and the luxation could be produced at will, but through two days of observation the luxation of the left patella was seen only once. The present owner, who values the pony very highly on account of its tricks and it being an excellent saddler and driver for children, wanted a sure cure or none at all, and we decided to perform the operation mentioned in "Moeller's Surgery," attributed to Violet, Santo, Cavallari and Guigas, and which was also described in the AMERICAN VETERINARY REVIEW of June, 1901, page 221, by Gamba, who refers to it as "Bassi's operation."

After casting the animal, we decided on an open operation, because we could not find a way to secure the leg properly, also because the animal is very small and the ligament was only located with difficulty; so we untied the leg, allowed it to drop into its natural position and held it there by two guy-ropes. The field of operation was then cocained, shaved and thoroughly disinfected, the internal straight ligament laid bare by an incision one inch long and right over the ligament; a grooved director passed over the capsular and beneath and around the internal straight ligament and the latter divided with a pointed bistoury. The wound was then rendered aseptic and closed with one stitch. The luxation did not recur after the animal got up and the patient was then turned into a clean grass lot. A marked oedema made its appearance the next day below the field of operation, but passed away and the wound healed by

first intention. In the between time the left patella would frequently become dislocated, and on June 15th we performed the operation on the left side by the same method. This second wound became infected in spite of our precautions, probably because the flies troubled the patient very much on the shaved spot, and he used his tail freely in trying to keep the tormenters away. The wound healed in two weeks with no other care but daily washing with warm water. The animal is without a fault to-day, and its owner is greatly pleased.

In large horses chloroform narcosis would probably be advisable, as the operation seems comparatively easy when the leg is not restrained, and can be extended and flexed to suit the operator; also because the danger of puncturing the synovial capsule by a sudden jerk of the leg of animal is greatly minimized.

We recommend this operation to the profession because its success is very remarkable in the upward luxation of the patella of the horse, and it should prove very remunerative, because there are many horses afflicted with this lesion in the country who are almost valueless on this account. All we ask is that those brother veterinarians that perform the operation hereafter will report in these columns their observations and conclusions.

A PECULIAR CASE OF TETANUS.

By WILHELM SCHUMACHER, M. D. V., Milwaukee, Wis.

Was called in the evening of May 21st to see a bay horse, about 15 years old. History: The horse had been driven very hard the day before, came home very stiff, but was eating well. Symptoms: Usual attitude of hind legs of a horse sick with tetanus, muscles of back hard, but the animal manages to use its tail, head extended, nostrils wide open, elevation of membrana nictitans absent and not producible by any means. Temperature 101° , pulse 54 (dicrotic), respiration 24. Told the owner that the horse presented symptoms of lockjaw, but that I would call next morning to verify my diagnosis by daylight. Saw the animal next morning and was informed by the attendant that it was apparently better; had taken its food as usual, the bowels had moved freely and that it was rather lively. Examination showed the peculiar position of the hind limbs (which the owner claimed the horse always had), muscles of the back not quite as hard as night before; the animal used the tail freely to chase flies, neck still extended, elevation of membrana nictitans absent and not producible. Temperature 101 , pulse 50

(dicrotic), respiration 30. Watery discharge from nostrils and eyes ; pressure on larynx causes violent and prolonged coughing. Another careful examination of the animal did not bring out any new points ; no wounds could be found, and I was thoroughly puzzled as to the right diagnosis, but told the owner that the horse was suffering from tetanus and also from a severe laryngitis. The owner did not agree with me on the tetanus theory ; said that he had lost seven horses with tetanus in one year, and that he knew the disease when he saw it. He would not submit the animal to any treatment, as it was not valuable enough, besides he had never seen a cure from tetanus. The horse had been previously treated for a heart affection, and he asked for another bottle of heart tonic, which was given and administered to the horse for four days. The case having roused my curiosity I made a call next day and found the animal improved, with no other symptoms than a stiffness of the back and the coughing spells. Two days later the horse seemed well and the owner concluded to give him a rest by turning him into pasture. I advised to keep him in for another week, as the weather was rather unfavorable.

June 2d the owner came to our office and reported that the horse took sick the night before, became very stiff, was found down next morning with all the symptoms of tetanus, and ordered destroyed by the owner.

In talking over the case with the owner he remembered that the horse had calked himself on the hind foot about two months previous, and that the wound had healed without any complications. My theory is that the whole stable is infected with the *bacillus tetani*, that the attack resulted from the wound received in the stable, and I report this case because of its peculiar and confusing symptoms and course.

DYSTOKIA DUE TO RELAXED MUSCLES (?)

By D. C. NOWELS, V. S., Rockwell City, Iowa.

Subject, eight-year-old draft mare, in foal. I was called June 26; patient had been in labor twelve hours. Care-taker had made manual examination and could not find foetus, and said there was an immense bulging of abdomen below the ribs. From description I suspected extra-uterine pregnancy.

I made manual examination ; found the os not dilated, proceeded to dilate it with my hand ; found the foetus within the uterus and low in abdomen ; anterior presentation ; foetus on its back, the head deviated to the left and downward. I rup-

tured the membrane, secured the anterior limbs with cords, then used the repeller, and brought up the head; rotated the foetus, and a live foal was delivered without further trouble (by traction).

Both dam and foal were doing well at last reports, but from appearance all the abdominal visceræ of dam seem to hang below the ribs and at time of foaling dam seemed to have no power to throw foetus up into inlet, as if the abdominal muscles were torn loose; and the hair was worn away from a large area where the pelvic limbs rubbed against abdomen in progression, as if this condition had obtained for some time.

Is this a common occurrence? I find no literature on such a condition.

Would you advise the Italian operation for luxation of patella?

[NOTE.—In reference to last question, refer correspondent to article in this number, "Habitual Luxation of the Patella and Its Cure by Division of the Internal Straight Ligament," by Drs. Anglicker and Schumacher, department "Reports of Cases."—EDITOR.]

POISONING BY FEEDING ON SINAPIS NIGRA.

By F. J. ROUB, D. V. S., Monroe, Wis.

November 23, 1901, 1 P. M., I was called up at my residence by 'phone, by a Mr. Lawver, living twelve miles west, to come at once, very sick cows. I informed Mr. Lawver that I could not comply with his wish before evening, as there were two calls for my services just previous to his call; he stating that if I could not come by 5 P. M., not to come at all, and very little did I care to make the visit at all, for I knew he was in the habit of patronizing empirics, and defiant with qualified practitioners. After making the two calls previous to Mr. Lawver's, and having ample time to arrive at his farm by 5 P. M., I concluded to go. On arrival, you can imagine my surprise: in front of the barn lay ten cadavers, minus their epidermises, and one cow in the barn in its last throes of death, and seven cows that were very sick. Being informed by the owner that all of them would die, for the symptoms were in unison with the ones that had died—this being the owner's prognosis, not mine. All being milk cows, highly fed in order to produce greater profits by a large flow of milk, they showed better care than the majority of cows receive. After taking in the surroundings, and

considering everything in a good hygienic condition, being at a loss as to what the cause originated from, I asked the owner for information in regard to feeding, watering and change of pasture. The owner stated as follows : "I stable them nights, feed clover hay with a ration of ground feed night and morning, turn them out mornings, feed shock corn in yard, the remainder of the time run at large over the farm." Bear in mind, Nov. 23, at 5 P. M., I arrived at Mr. Lawver's farm, but the day previous, the 22nd, at 3 P. M., these cows were turned into a small lot, about 4 acres, situated on river bottom, between the barn and river, lot being utilized to raise corn for early feed in autumn. After the corn was cut off, mustard grew up in abundance, and as there had been no stock allowed to run on this lot previous to Nov. 22, owner thought he would turn his cows in and let them pick up what rough feed there was left, cows being in from 3 P. M. until 5 P. M., only two hours, then being housed in the barn for the night, given their evening ration ; all of them feeding normally. Three hours later, he noticed four of the cows being sick ; owner sending at once for an Illinois empiric. As near as I could learn, his treatment was hot teas, coffee, monkshood, Ward's liniment and painkiller. As more of the herd continued to get sick, and by midnight two had died, the "doctor," if I may call him such, declined to give further treatment, departing for home, leaving owner alone to battle with the afflicted cows.

The cows continued to get sick, one after another, and so they continued to die at intervals, from one to two hours apart. As I stated before, this being on the 22d, and I was called on the 23d at 1. P. M., but did not arrive at destination until 5 P. M., ten cows dead and the eleventh one dying, and seven more sick, and seemingly going in the same channel.

At this point I became very anxious to find the real cause, anticipating that holding an autopsy on the two cows that died just previous to my arrival, might reveal to me the much-desired information. Proceeding with the autopsy, dissecting through into the visceræ, there was an abundance of yellow fluid in the abdominal cavity, and very strong fumes of mustard being present. Speaking of this to the owner, he informed me that mustard grew up in abundance in this lot ; and that he noticed the cows eating it and seemed to relish the same. Continuing with the autopsy, there being from three to four gallons of this yellow fluid in the abdominal cavity ; bladder full and of same color ; over the walls of the rumen following blood-

vessels and lymphatics there was a yellow gelatinous mass, varying from one to three inches thick; the intestinal tract showed a slight enteric condition. On opening the rumen, I found from one peck to half a bushel of mustard stocks and leaves. Satisfying my own mind that the trouble was due to mustard poisoning, I turned my attention to the seven head in barn that were sick.

The owner's prognosis was that all would die. My prognosis was zero.

Cows standing, dull, haggard expression; extremities cold; some tympany; respirations labored; could not be made to move, only by main force, then they would stagger and fall unless supported, showing that locomotion was greatly interfered with; when fatal would stand in one position without moving, until they would fall and lie in a semi-comatose condition, from one to three hours before death.

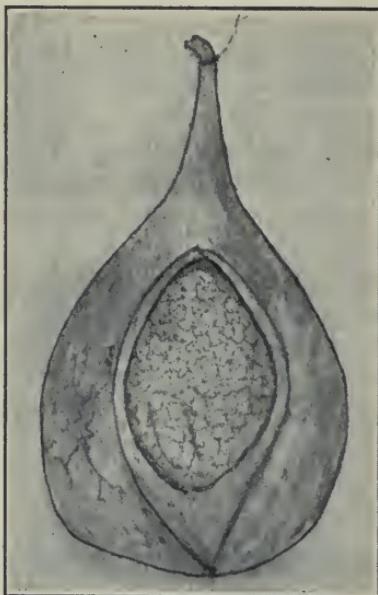
Treatment.—I ordered one and one-half lbs. of sulphate of soda given to each one of the sick cows, and to follow up with one lb. every twelve hours, until the bowels moved; in addition I gave nux vomica and spirits nitre. The seven head under this treatment made a fine recovery, and regained the normal flow of milk.

AN EXTRAORDINARY VESICLE CALCULUS IN A FRENCH BULL BITCH.

By ROSCOE R. BELL, D. V. S., Brooklyn, N. Y.

The subject was a valuable French bull bitch, purchased at the New York Dog Show for a fancy price, two years ago, when she was three years old. She weighed in health about 40 lbs., and was always full of life and very affectionate. Until two weeks before her death, she was apparently well. The first symptoms observed by the household were frequent urination, and an offensive odor from the urine. Her appetite remained good for a week after these symptoms were first noticed; but when she remained in her basket, partaking only daintily of her food, my services were sought. I found that not only was the urine very offensive, but it contained pus and blood. An external examination by manipulation was made and a hard, round substance could be felt through the abdominal walls, in about the location of the bladder. As the outlines were those of the size of a goose-egg, I could not believe that a calculus was the object, and as the patient was already in a septic condition, I informed the owner that her dog was in a desperate condition,

and that immediate surgical interference held out the only hope of benefit. As I was extremely busy with equine patients, I advised her to take the dog to a hospital, and gave her a note to a well-known specialist, who thought that an operation would not save the animal. Not being willing to submit her pet to useless pain, she brought the animal back to my kennels, where she died the following day from septic infection.



I was permitted to hold an autopsy, and found the bladder completely filled with a single calculus, it being so large that the walls of the bladder were stretched to their utmost, and considerably thickened, the mucous membrane being inflamed and partially necrotic. The urine would trickle through the ureteral openings, pass around the calculus through little grooves, and out of the urethra almost continuously. When the front wall of the bladder was incised longitudinally, the edges retracted at once, as shown in the accompanying rough drawing, showing the great tension upon the organ. I have never removed the calculus, but keep it preserved in alcohol, just as shown.

PROTARGOL IN VETERINARY SURGERY.

By W. E. A. WYMAN, Portland, Mich.

While testing protargol, about a year ago, with a view to

studying its proper place in surgical diseases, a number of important and valuable features—its continuous bactericidal action, its powers as a desiccant, its superiority as a cicatrizing—became well established. The Farbenfabriken of Elberfeld Co., 40 Stone St., New York, very kindly placed an inexhaustive supply at the disposition of the writer. A lengthy report of its various uses has just begun to appear in the *Journal of Comparative Medicine and Veterinary Archives*.

About fourteen days ago the writer treated a case with protargol, which seems to warrant special mention:

Gray mare, 11 years old, 1350 lbs., sound. In the morning her right eye was punctured by a dry twig, which on breaking off remained in the eye. Site of puncture, at union of superior border of sclerotic and cornea. Conjunctiva decidedly oedematous, bulging from the cavity about one inch. The animal was first seen about 3 P. M. that day. On removal of the dry piece of wood, which was about one-quarter inch in diameter, and had entered the eye about three-quarters of an inch deep, a gush of blood, coagula and prolapsus of the iris followed.

The whole eyeball, conjunctiva and eyelids were thoroughly irrigated for some time with a $\frac{1}{2}$ per cent. carbolic acid solution. Next the protruding iris was snipped off. Now, a 15 per cent. protargol solution was repeatedly and gently injected through the wound into the eye. The oedematous conjunctiva was punctured in numerous places with a needle. All parts were irrigated once more with the carbolized solution and a pressure bandage kept moist with 1 per cent. protargol solution applied. During the five days that this animal was in the hospital no rise of temperature occurred, appetite good; in fact, her general health was perfect.

As a matter of curiosity, the writer removed the dressing in 24 hours. Oedema of the conjunctiva entirely gone; slight inflammation of the cornea. On the 5th day the animal went home. A calomel dusting powder was given, and, outside of a limited nebula at the site of puncture, a complete recovery was obtained.

A RECORD TUBERCULOUS HEART.

Don C. Ayer, D. V. S., Chief Inspector of the Bureau of Animal Industry at Omaha, Neb., sends the REVIEW the accompanying photograph of a specimen which came under his observation recently in one of the slaughter-houses in his jurisdiction. He furnishes the following description:



"Heart of a Cow Affected with Tuberculosis.—Weight, 44 lbs. Lungs and liver showed infection, as well as all lymphatics, but not so extensively as others I have seen where the heart was not infected."

Dr. Ayer also adds: "Please have this set properly. Take the May number of the REVIEW, for example; turn to page 144, where the tuberculous liver is shown; now turn the book upside down and see how much it will improve the appearance of the specimen."

THE members of the Veterinary Medical Association of New Jersey presented President Wm. Herbert Lowe with an elegant silver dinner service, at the banquet on the 10th ult., as a token of appreciation for his great service to the profession of the State, in having united a scattered and dissenting profession into a strong band of enthusiastic brethren, and throwing around them the strong protecting arm of the law. No recipient was ever more worthy of such a token, nor are there any who could more thoroughly appreciate the missive of grateful esteem.

EXTRACTS FROM EXCHANGES.

ENGLISH REVIEW.

By Prof. A. LIAUTARD, M. D., V. M.

A CASE PRESENTING SOME FEATURES OF HERMAPHRODISM [*Henry Taylor, M. R. C. V. S.*].—The subject is a brown van cob, observed by the author, which presented very peculiar abnormalities in the sexual organs. The animal presented parts of the generative apparatus of both sexes, viz., a miniature penis (not in the regular position, however) mammary glands and testicles. The penis was placed at the lower part of the perineal region, pointing backwards and downwards. It projected in the natural state about three or four inches from the périneum, and could be withdrawn about two inches more from a structure which might be called the prepuce. The urethral opening was well marked, and was situated nearer to the superior surface than to the inferior. The glans penis was also quite distinct. There were two mammary glands in the normal position, with well-marked lactiferous ducts. The testicles were felt well up in the groin, but hardly as tense as normal. Although there was no vulva, there was a distinct invagination of the skin, incomplete, without mucous lining or anterior orifice. At its lower aspect was the supposed penis. This might be called an abnormally developed clitoris, but it was pierced by the urethra, which is not the case in an over-developed clitoris, and was situated some four or five inches lower than the ordinary position of the clitoris. The exact location of this case in teratology is not clear to the author's mind, and it is recorded only as offering some features of hermaphroditism.—(*Vet. Jour.*) [An exact counterpart of this case was exhibited at Coney Island and throughout New York City and its suburbs ten or twelve years ago, and was examined by most of the local veterinarians of that date. The animal was killed by a live trolley-wire during the street railway strike of 1895 or 96, and is now the subject of a lawsuit against the railway company by the owner of the monstrosity, Wm. Krug, of Seventeenth Street, Brooklyn, and the writer has been subpoenaed as an expert witness.—R. R. B.].

TUMOR IN A COW'S MOUTH [*W. Owen Williams, F. R. C. V. S.*].—The nature of this growth and the rarity of its location make this record very interesting. It relates to the history of a

cow which a few weeks before calving was observed to have difficulty in feeding and chewing her cud ; she was also unable to protrude her tongue. As a consequence, she soon lost condition, and an examination of the mouth revealed the presence of a tumor of considerable size, growing from the gum and involving the first four molar teeth. After waiting until she had calved, the cow was then cast, and on examining the mouth, the tumor was found somewhat pedunculated, having a short, thick stalk, and the mass pressing against the palate. With a kind of eraser made of wires it was removed, but not without some difficulty, as the wires broke twice before the tumor was gotten loose and brought out. The molars were also extracted. The haemorrhage was slight. The tumor weighed 10 ounces, and was of actinomycotic nature. Three weeks after the operation, it was again growing.—(*Vet. Journ.*)

FRACTURE OF THE FIRST RIB [*James McKenny, M. R. C. V. S.*].—This lesion is the subject of a very interesting record by the author, where after mentioning the symptoms, which by some are considered as belonging to that kind of injury, viz., elbow dropped, knee protruding and flexed, fetlock knuckled and toe of foot only on the ground ; Mr. J. McK. remarks that also for others those symptoms are common to other injuries, such as laceration of the triceps muscles, fractured scapula, pisiform bone or navicular bone. For the author the differential diagnosis of all those injuries from that of fractured rib, which all produced the symptomatology of dropped elbow, etc., is comparatively easy—"In case of injured triceps there is local heat, swelling and pain without crepitus ; with fractured scapula this is easily detected and localized by moving the leg forwards and backwards, inwards and outwards, but if the crepitus is obtained on abduction and adduction of the fore-leg on the affected side, which cannot be localized and cannot be obtained on bringing the leg backwards and forwards, the first rib is broken. Again when the pisiform is injured, the swelling of the back of the knee and its manipulations decide the nature of the injury ; for navicular bone broken, the history of the case, alteration of the foot, the heat, the pain, etc. are sufficient evidences. Conclusions : Fracture of the first rib can be made out by detection of the crepitus only by crossing the fore-leg near the affected rib as far as possible across the front of the sternum and then jerking it outwards (abduction and adduction) ; the crepitus thus obtained will be readily felt when the hand during the process is kept firmly on the scapula ; it will be dull and of

course cannot be localized to any part of the scapula. It will also be absent when the leg is moved backwards and forwards." The author records several cases in support of his statement. One of rupture of the triceps muscle, one of lacerated muscle and fractured lumbar vertebræ, of fractured pisiform and fractured navicular, with four others of fractured first rib, where the differential diagnosis had proved correct.—(*Veterinarian.*)

GASTROTOMY IN THE DOG [*F. Hopkin, M. R. C. V. S.*].—Dogs may eat sweets, but must be careful of iron balls. A cross-bred Airedale terrier had sweets thrown to him, which he enjoyed and swallowed. An iron ball also thrown was swallowed, but could not be removed by castor oil. It is reported that he showed shortly after "marked signs of paralysis in the hind quarters and was also affected with chorea about the muscles of the face;" at any rate, whether these were the results of the presence of the iron ball or not, an operation was decided upon, and gastrotoomy performed antiseptically, of course. Through an incision of the median line, the foreign body was easily made out, but it was with difficulty that it could be brought into such a position to be easily removed by incision of the stomach. This was afterwards sutured with gut stitches, also the muscles and peritoneum. The skin was sewed with silk. Rectal injections of milk and brandy were given for seven days and followed with Mellin's food per mouth for a few days after. The ball weighed 4 ounces. Recovery was perfect, except he still had chorea.—(*Veterinarian.*)

TUBERCULIN FOR DOG [*E. H. Kent, M. R. C. V. S.*].—From an article on tuberculin and its use, I find the record made by the author of the use of tuberculin in three cases, where most satisfactory results were obtained. A fox terrier bitch, on account of peculiar suspicious symptoms, had an injection of 2 minims of tuberculin, when the temperature, being 102.6° at 9 A. M., went to 104° at 11, 105.4° at 1 P. M., 105.4° at 5 P. M.; 104.6° at 9 P.M. Next morning it was 103.2° . At post-mortem she showed tuberculosis of the liver, kidneys and lungs. A retriever sick since two years received 3 minims of tuberculin one morning when his temperature was 102.2° . At 9 A. M. it was 102.2° , at 11 A. M. 103.8° , at 1 P. M. 105.8° , at 5 P. M. 105.6° , 7 P. M. 105.2° . The next morning it was down to 103° . Tested a second time after a few days, the result was the same. On post-mortem, general tuberculosis was found, lungs and pleura more affected. The third case was a five-year-old fox terrier, which had been wasting for six months. His temperature was

102°. 2 minims of tuberculin being injected, the temperature did not show the same reaction, although it rose some. The dog died the next day. The suspicion of tuberculosis was not confirmed at the post-mortem, as instead of phthisic lesions, the cause of the animal's sickness was found in his stomach. This contained five pennies, which "no doubt caused the state of congestion of the organ."—(Veterinarian.)

OÖPHORECTOMY AND ACCIDENTAL CYSTOTOMY [*F. H. Ridder, M. R. C. V. S., and T. Hobday, F. R. C. V. S.*].—This concisely recorded case is to point to the possibility of an accident which may occur in small animals when submitted to that operation. It relates to a female cat which, being about to be operated upon, when after preparation of the abdominal wall by cleaning, shaving and careful asepsy, at the time that the skin was incised the point of the scalpel entered the much-distended bladder and made a wound in it fully half an inch long. By careful attention the greatest part of the contents escaped outside of the body. The wound was closed with sterilized silk as best the condition permitted. Thorough sterilization was accomplished. The bladder returned into its place. The peritoneum cleaned with chinosol solution and the abdominal walls closed with a double row of silk-woven gut sutures and the whole covered with iodoform colloid. Recovery was perfect without the slightest complication.—(Veterinarian.)

CEREBRAL TUMORS IN A HORSE [*W. Scott, F. R. C. V. S.*].—An old cart horse, looking well in condition, and having always done his work well, after heavy hard work during a very hot day, showed symptoms of cerebral disease well marked: "he was beating himself against the walls of his box, staggered in a helpless manner, bore his head into a corner and pushed against the walls," etc., etc. Examination of the eye with the ophthalmoscope revealed the retinal vessels engorged with blood. Pupil at times contracted and again dilated. Relieved once of this attack, he had another a few months after, of which he died. At the post-mortem the cranium was found to contain about 3 ounces of clear serum. The surfaces of the meninges looked healthy. In both lateral ventricles there was found an oval neoplasm, about the size of a small potato, imbedded in a sero-sanguineous fluid. One being a little bigger than the other, they weighed together $5\frac{3}{4}$ ounces. They were somewhat hard in consistency but smooth; upon section they grated against the knife. They were pinkish in color. Microscopically they were made up largely of coarse straight bars and

strands of fibrous tissue, which were arranged in a more or less radiate manner. Scattered through the tumors were numerous crystals of degenerate blood pigment. In parts the neoplasms were very cellular, the arrangement and character of the cells suggesting sarcoma.—(*Veterinarian.*)

THE estimated earnings of American jockeys abroad this season thus far, is \$341,000.

HENRY WARD BEECHER'S TRIBUTE TO THE HORSE.—Society owes to the horse a debt of gratitude a thousand times greater than it does to thousands of men who abuse him. He has ministered to progress, has made social intercourse possible when otherwise it would have been slow, or occasional, or altogether impossible; he has virtually extended the strength of man, augmented his speed, doubled his time, decreased his burdens and, becoming his slave, has relieved him from drudgery and made him free. For love's sake, for the sake of social life, for eminent moral reasons, the horse needs to be bred, trained and cared for with scrupulous care.

NONE of the race tracks in America or Europe can compare with the magnificent equipments of the track at Koudan, Japan. It is about a third of a mile in circumference, and all the way around are rows of splendid stone trimmings, such as ponderous lamps and posts, railings and the like, which make up for the absence of the grandstand. This track is purely Japanese, and as such is more of a novelty, than either of the famous tracks of the country, one at Ueno Park, Tokio, and the other near Yokohama.—(*Horse-Shoers' Journal.*)

FACTS ABOUT LONDON.—A child is born every three minutes; and a death is registered every five minutes. The city contains over 700 railway stations, nearly 800 miles of railway line, and 11 railway bridges span the Thames. Daily 1,000,000 persons travel on the underground railways, and 2,500,000 in 5,000 omnibuses, 7,000 hansom, 14,000 cabs, and 7,000 tram-cars. The total population is between 6,000,000 and 7,000,000. Four thousand postmen deliver 10,000,000 letters weekly, walking a distance equal to twice the circumference of the globe. Sixty thousand letters are written a day, consuming 30 gallons of ink. Ten thousand miles of overhead telegraph wires almost shut out the smoky canopy which spreads above the London streets, and the number of telegraph messages received in London last year was over 6,000,000. Ninety million gallons of water are consumed daily.

BIBLIOGRAPHY.

TRAITÉ DES MALADIES DU BÉTAIL—(Treatise on Diseases of Cattle). By Prof. G. Moussu, of Alfort. 1 Vol., in 8vo of 772 pages and 189 figs., 4 colored plates. Asselin & Houzeaux, Paris.

Of course, books on diseases of cattle are plenty—German, English, French, and even American authors have published quite a number of them, and, yet, this new book is different from all others ; it is one special in its kind ; and why ? Because it is conceived in a synthetical spirit, and is the *resumé* of the course taught by the Professor of Alfort for over ten years.

"It is written," says the author, "so as to be understood by all, and I have tried to make it as demonstrative as possible, certain that I am that education by the eye is superior to that which requires the work of interpretation of what is written."

And, indeed, Prof. M. has succeeded. For his work is full of original and ingenious articles on the etiology and nature of diseases. The groupings of diseases are perfectly rational, and each one is preceded by an *exposé* of the methods of exploration of the organs and of the semiology.

Successively apparatus after apparatus, organ after organ, are studied, and almost all the diseases that can affect bovines are considered. But not only that, animals of ovine, caprine and porcine species are also referred to. General contagious diseases, except tuberculosis, are ignored, and if even this last is considered it is more on account of its frequency in the different species than for any special purpose.

The work is divided into eleven classes ; and each one in a certain number of chapters. In the first class, the apparatus of locomotion, with the diseases of bones of the foot, of articulations, muscles and their accessories, and closing with rheumatism. The second class has eleven chapters, with the diseases of the digestive apparatus. This contains a very interesting part relating to the various intoxications. The third class treats of respiratory diseases. The fourth considers the difficult diagnosis of cardial affections, with those of the blood vessels, of the blood and of the lymphatics. The fifth contains the nervous troubles. The sixth has the affections of the peritoneum and the hernias. The seventh brings to the reader the genito-urinary diseases, so troublesome in males or females of those animals. In the eighth we find the most common skin diseases. Few of the diseases of the eyes fill the ninth chapter. In the

tenth we have the infectious diseases. The work is completed in the eleventh chapter by a concise consideration of surgery, for operations which are likely to be performed daily in practice.

The book is one which will prove of much use to the practitioners, and will give to those who will read it much practical information.

A. L.

DICTIONNAIRE VÉTÉRINAIRE (Veterinary Dictionary). By P. Cagny and H. J. Gobert. 2 large vol. in 8vo. of 1500 pages and 1800 plates, some in color. Vol. I. (A—H), octavo of 768 pages. Now for sale. Library of J. B. Baillière et Cie, 19 rue Hautefeuille, Paris.

The authors have rightly thought that, besides the classical works, due to professors of schools, there was room for a practical work, *scientific* without excess, which would put at the disposition of practitioners and students a *résumé* as exact as possible of actual knowledge, as well as of the indications of medical and surgical therapy sanctioned by experience.

The form of dictionary that they have adopted is the most convenient for a work including : anatomy, physiology, pathology, surgery, hygiene, sanitary medicine, jurisprudence, etc. ; a form which, however, is justified by the desire to allow the practitioner to find at once the information he seeks.

To say that the new methods of Pasteur have had time to be appreciated and that they have proved their superiority, the time had arrived to make a selection from among the materials disseminated in journals, publications, archives of scientific societies, to place at the disposition of all, who by profession or by taste, had in view the improvement and the health of animals.

MM. Cagny and Gobert have tried to make their dictionary a repertory truly on a level with the progress of science and of general practice, and which if needed takes the place of a complete library.

To do this they have resorted to the experiences of all the most known among the French authors—Chauveau, Nocard, Trasbot, Cadiot, Moussu, Barrier, of Alfort ; Arloing, Peuch, Cadeac, of Lyon ; Leclainche, Lalaunié, Neumann, of Toulouse, and many others in civil and military service. The recent works of several foreign veterinarians have also been called to contribute to the superiority of the whole work.

The addition of a very large number of plates, several of them colored, has rendered the explanation easier and their understanding more complete.

We have for a number of years looked for a similar work in

the English language. It is to be regretted that American veterinary literature should still be deficient in that, that American veterinary writers have not tried to fill the want, or that an American publisher cannot be found to assume the publication of a similar work, which we know is already prepared and complete.

A. L.

TIBIO-PERONEAL NEURECTOMY FOR THE RELIEF OF SPAVIN LAMENESS. By W. E. A. Wyman, V. S., M. D. V., author of "The Clinical Diagnosis of Lameness in the Horse," etc. New York: W. R. Jenkins, 851-853 Sixth Ave.

In a small pamphlet of 30 pages, Dr. Wyman takes up an operation which was introduced to the profession in 1898 by Prof. Bossi, and first performed in America, we believe, by Dr. Adolph Eichhorn, then house surgeon at the American Veterinary College. Since then various American surgeons have performed it, but probably none so extensively as Dr. Wyman, who reports ninety-one cases in his treatise. He first gives the history of the operation, the indications for its adoption, the surgical anatomy, the sites of resection of the posterior tibial and peroneal nerves; the technique of the operations, and the sequellæ. After the statistical table, details of each case are given, while the results are given as 55 complete removals of lameness, 18 leaving slight lameness, and 7 unknown. In the tibial wound 65 healed by first intention, while 40 had such good results in the peroneal. Muscular hernia followed eight times, exungulation three times, fatal septic infection once. Four cases remained lame; two fractures followed neurectomy.

Those who contemplate placing this operation in their *repertoire* should avail themselves of Dr. Wyman's extensive experience by securing this brochure.

R. R. B.

ANIMAL CASTRATION. By A. Liautard, M. D., V. M., Professor of Anatomy, etc., New York-American Veterinary College, Corresponding Member of the Société Centrale de Médecine Vétérinaire, etc. Ninth Edition, revised and enlarged. With 53 plates. New York: Wm. R. Jenkins, 851-853 Sixth Avenue.

This popular text-book, first issued in 1884, has reached its ninth edition, which has just emerged from the Jenkins press in a much more valuable form than ever, since many of the more modern methods of operation upon the principal procreative organs of both the male and female members of the various species of domestic animals have been added, bringing the work right up to date. The chapter, for instance, on abdominal and inguinal cryptorchidy has been entirely rewritten, while two American surgeons (Drs. T. B. Rogers and J. Elmer Ryder) have added articles on the spaying of small animals and the caponizing of roosters. Liautard's "Animal Castration" is too

well-known to the American veterinarian to require any extended analysis here; we simply announce that it has been added to wherever progress in the art of surgery has been made, so that one may feel when referring to it that he has secured the latest and best methods of the various procedures. R. R. B.

HORSE DOCTOR'S BARN BANQUET.



PHILADELPHIA, July 1.—(Spl.)—Graduates of the Veterinary Department of the University of Pennsylvania were banqueted in a barn last week.

The feast took place at 1336 North Marshall street, where Dr. J. J. Maher has a veterinary hospital. The long table was placed between two rows of stalls. On the floor was a foot of straw, and the stall posts were decorated with ribbons and flowers in the colors of the University of Pennsylvania.

Dr. Maher gave the banquet in honor of J. H. Zollinger, one of the graduates of the Veterinary Department of the University. The other guests were also the members of the class of 1902. At each cover of the 17 banqueters was a souvenir in the form of a toy horse or a toy dog, with beads for eyes. Ice cream was served. It came in shapes of horses, dogs and cows.—(*Cincinnati Post.*)

MICHIGAN has an anti-docking law, whereby all persons owning docked horses were required to register them prior to Dec. 6, 1901. It is also unlawful to bring a docked horse into the State, unless it be so registered. Fine for violation not less than \$50 nor more than \$250, in default of which imprisonment for not less than ninety days.

SOCIETY MEETINGS.

AMERICAN VETERINARY MEDICAL ASSOCIATION.

THIRTY-NINTH ANNUAL MEETING AT MINNEAPOLIS, MINN.,
SEPT. 2, 3 AND 4, 1902.

Headquarters—West Hotel, the Assembly Hall of which will be used for the convention.

Clinic—Veterinary Hospital, University of Minnesota, St. Anthony Park.

Banquet—Thursday 8 p. m., Hotel Del Otero, Spring Park.

Welcomes—His Excellency Governor R. S. Van Sant; the Mayor of Minneapolis, and Mr. W. G. Nye, Secretary of the Commercial Club.

Response—Dr. Roscoe R. Bell, of New York.

PAPERS TO BE OFFERED.

“The Veterinary Profession, Past, Present and Future,” by Prof. D. McEachran, Montreal, Can.

“The Relationship of Veterinary Science to the Medical Profession,” by Dr. D. King Smith, Toronto, Ont.

“Hospital Management of Dogs,” by Dr. Charles Ellis, St. Louis, Mo.

“Sidebones,” by Dr. J. S. Anderson, Seward, Neb.

“Pathogenesis of Equine Pneumonic Emphysema,” by Dr. A. H. Baker, Chicago, Ill.

“Poisonous Stock Foods,” by Dr. N. S. Mayo, Manhattan, Kans.

“Ictero-hæmaturia in Sheep,” by Dr. M. E. Knowles, Helena, Mont.

“The Organization of State Veterinary Work,” by Dr. Leonard Pearson, Philadelphia, Pa.

“Results of Strict Sanitary Regulations in Arizona,” by Dr. J. C. Norton, Phoenix, Ariz.

“Malarial Fever in the Horse,” by Dr. F. Torrance, Winnipeg, Man.

“External Ulcerative Ano-Vulvitis of Cattle,” by Dr. J. J. Repp, Ames, Ia.

“The Care and Comfort of Domestic Animals under Varying Circumstances,” by Dr. E. A. A. Grange, New York, N. Y.

“Hæmorrhagic Septicæmia in Cattle,” by Dr. S. D. Brimhall, Minneapolis, Minn.

"Equine Periodic Ophthalmia," by Dr. M. Jacob, Knoxville, Tenn.

"Differential Diagnosis between Farcy, Furunculus and Bursatti," by Dr. C. C. Lyford, Minneapolis, Minn.

"Barrenness in Bovines," by Dr. Charles Schmitt, Dodgeville, Wis.

"So-called Contagious Ophthalmia in Cattle," by Dr. T. D. Hinebauch, Fargo, S. D.

"The Legitimate Field of the A. V. M. A.," by Dr. Roscoe R. Bell, Brooklyn, N. Y.

"The Life and Character of Dr. Rush Shippen Huidekoper," by Dr. W. Horace Hoskins, Philadelphia, Pa.

THE SURGICAL CLINIC.

The Local Committee was unable to furnish a definite statement in regard to clinical data, as is usually the case, since the material obtainable is not usually known so far in advance. However, Secretary Stewart states that Dr. J. S. Anderson, of Seward, Neb., will demonstrate his operation for the treatment



FRONT VIEW OF THE NEW \$25,000 VETERINARY BUILDING, UNIVERSITY OF MINNESOTA;
WHERE THE NEXT A. V. M. A. CLINIC WILL BE HELD (108 X 117 FEET).

STABLING IN THE REAR NOT SHOWN IN THIS VIEW.

of "Sidebones," Dr. Charles Schmitt, of Dodgeville, Wis., the "Treatment of Barrenness in Bovines," Dr. C. C. Lyford, of Minneapolis, the "Treatment of Bursal Enlargements." It is probable that as a part of the clinic there will be a display of operating tables, and their actual use demonstrated.



OPERATING ROOM, WHERE THE CLINIC WILL BE HELD. AMPLE SEATING CAPACITY AND UNOBSTRUCTED VIEW OF THE RING.

THE ENTERTAINMENT PROGRAMME.

The Local Committee of Arrangements have planned the following entertainment for the large number of members, ladies and visitors expected :

Tuesday.—Morning : Attendance at the meeting of the A. V. M. A. Afternoon : A visit to the State University grounds and buildings. Evening : An informal reception at the West Hotel, from 7.30 to 8.30.

Wednesday.—A trolley ride to Minnehaha Falls, Indian Mounds, and Como Park, St. Paul.

Thursday.—Morning : A visit to the largest flouring mill in the world and to one of the saw-mills in Minneapolis. Afternoon : A car-ride to Lake Minnetonka, a boat-ride on that beau-

tiful lake, and at 8 p. m. a banquet at Hotel Del Otero, Spring Park.

Friday.—Morning : A clinic at the University Farm. Afternoon and evening : Attendance at the Minnesota State Fair ; this being Minnesota Day, the races will be a special attraction owing to the large prizes offered.

HOTEL ACCOMMODATIONS.

The headquarters for the meeting will be at the West Hotel, which offers a rate of \$3 per day, American Plan. The Holmes makes a rate of \$2 and \$2.50 per day, and the St. James, \$2 per day. On the European Plan, the Hotel Hyser, rooms 75 cents to \$2.50 per day; Nicolett Hotel, \$1 per day and up; Russell Coffee House Co., 50 cents to \$1. Members and visitors are requested to write directly to the hotels for desired accommodations and to do so at once for the hotels are likely to be crowded, as the Minnesota State Fair which will be in progress at that time will attract large numbers to the city.

RATES AND RULES OF TRANSPORTATION.

All of the railway associations east of the Rocky Mountains have granted the usual excursion rate of $1\frac{1}{3}$ fare. The full fare to be paid going and $\frac{1}{3}$ fare return, providing the purchasers secure a certificate at the starting end of the journey. In the area south of St. Paul, extending from Chicago to St. Louis and Kansas City, there is a special excursion rate in force, less than one full fare for the round trip, the same beginning on September 1st and good for the return trip, to October 31st. Throughout the State of Minnesota an excursion rate will be in operation on account of the State Fair. The Canadian Pacific Railway System and the Grand Trunk Railway System will doubtless grant a $1\frac{1}{3}$ fare excursion rate, providing the Western Passenger Association will honor their certificates. We hope the Canadian railways may succeed, as it will encourage attendance from the several provinces.

FROM THE NEW ENGLAND STATES.

President Winchester is making an extra effort to bring out as strong a delegation from the New England States as possible, and has issued the following letter to the profession :

LAWRENCE, MASS., July 10th, 1902.

DEAR DOCTOR :—I trust the annual meeting of the American Veterinary Medical Association, held this year at Minneapolis, Minn., Sept.

2 to 5, will be a record-breaker in way of attendance and in the election of new members.

In order that the New England States may have a representation exceeding any past meeting, I take this means of bringing to your notice the most comfortable method of traveling, as well as the quickest service from New England.

Should you and seventeen others arrange to go together, we can have a special car to our destination.

The local committee of arrangements are planning many special features for the entertainment of all who come, more especially the ladies.

It is advisable that you secure your sleeping car berth to Minneapolis in advance, by applying to Mr. W. W. Hall, N. E. A., Chicago, Milwaukee and St. Paul Ry., 369 Washington Street, Boston. Should circumstances prevent your going, the money advanced for sleeping car accommodations will be cheerfully refunded.

The train will leave Boston, Saturday, Aug. 30th, at 2 P. M.; Worcester, 3.05 P. M.; Springfield, 4.29 P. M., over the Boston and Albany, New York Central, and Michigan Central Rys., arriving Chicago 4 P. M., Sunday, Aug. 31, connecting with the "Pioneer Limited" of the Chicago, Milwaukee and St. Paul Railway, leaving Chicago 6.30 P. M. Sunday Aug. 31, and reaching Minneapolis Monday, Sept. 1.

The total expense for the round trip, including berth and meals, will be \$67.70, as follows:

Rail ticket,	both ways	\$44.70
Berth in sleeping car, \$7.50 each way;	" "	15.00
Four meals in dining car, \$4 each way;	" "	8.00
<hr/>		
		\$67.70

From Worcester, deduct \$1.35 from round-trip ticket, and from Springfield deduct \$2.70.

Very truly yours,

J. F. WINCHESTER, President.

THE TRIP BY RAIL FROM THE EAST.

The majority of the Eastern veterinarians will journey to the convention by the Lehigh Valley to Buffalo, Grand Trunk to Chicago, thence by the Chicago, Milwaukee and St. Paul to Minneapolis. We have studied the routes of a number of roads, and believe the one mapped out here will insure the greatest diversity of scenery, comfort to travelers, and rapidity in reaching the convention city. We therefore give a short sketch of the route with time-table, so that those contemplating the trip may see the most salient features at a glance.

Leaving New York at 9.30 A. M., by the Lehigh Valley Railroad, which for natural beauty, for contrasted gentleness and severity of water and mountain character its course is unsurpassed; the road, after leaving Jersey City, runs westward across the State of New Jersey, crosses into Pennsylvania over the rocky gorge of the Delaware, and for about eighty miles follows the windings of the Lehigh river to the neighborhood

of White Haven, whence having scaled the mountains, it traverses the romantic Wyoming and Susquehanna valleys, and entering New York, finally fetches a circuit about the lovely lakes of that region to its termini at Buffalo and Niagara Falls, the entire distance between these extremes being about four hundred and sixty-three miles. Buffalo is reached at 9.45 P. M., if the day-light trip is taken over the Lehigh Valley, where only twenty minutes are spent, leaving there by the Grand Trunk Line at 10.05, where sleepers are taken, and the trip through Canada is made during the night, arriving at Chicago at 12.50 P. M. the next day.

Enough time will be spent in the Windy City for the tourist to see many of the points of interest, as the excursion over the C., M. and St. Paul railway will start for Minneapolis at 6.30 P. M. of that day. The country traversed by this road includes the prairies of Illinois, the diversity of landscape and the rounded hills of Iowa and Minnesota, the "Lake Region" of Wisconsin and the gorges, cliffs and wonderful formations of the famed "Dells" of the Wisconsin river, the picturesque and romantic scenery of the Mississippi, and the most important cities and towns of the Northwest are all included in one or another of its various direct routes between Chicago and the "Twin Cities." The comfort of the traveler is assured by its splendid roadbed and the fact that the most perfect and luxurious equipment known to modern travel is run over its lines. This schedule will land the delegate in Minneapolis at 8 A. M., after a run of ten and a half hours from Chicago.

TIME-TABLE FROM NEW YORK.

Leave New York,	via L. V. R. R.—				
foot West 23d St.,	"	"	9.25	A. M.—	5.40 P. M.
" Desbrosses St.,	"	"	9.30	"	5.40 "
" Cortlandt St.,	"	"	9.30	"	5.40 "
Brooklyn.					
foot Fulton St.,	"	"	9.15	"	5.15 "
" Newark,	"	"	9.55	"	6.12 "
" Easton,	"	"	11.25	"	8.00 "
" Philadelphia,	"	P. & R.	8.30	"	5.39 "
" Allentown,	"	L. V. R. R.	11.56	"	8.36 "
" Reading,	"	P. & R.	10.15	"	6.00 "
" Harrisburg,	"	"	8.00	"	
" Mauch Chunk,	"	L. V. R. R.	12.43	P. M.	9.30 "
" Wilkesbarre,	"	"	2.25	"	11.25 "
" Ithaca,	"	"	5.55	"	
" Geneva,	"	"	7.05	"	3.25 A. M.
Arrive Buffalo,	"	"	9.45	"	5.50 "

Leave "	" Grand Trunk	10.05	"	5.55	"
Arrive Chicago,	" " 12.50	"	8.45	P. M.	
Leave "	" C.M.&St.P.Ry	6.30	"	10.30	"
Arrive Minneapolis	" " 8.00	A. M.	12.01	noon	

RATE.—A reduced rate of one and one-third fare on the certificate plan has been granted for this occasion, which would be from New York to Minneapolis and return via the above routes \$39.35, and correspondingly low rates from intermediate points.

DATES OF SALE.—Tickets will be on sale and good going August 28th to September 2d.

SLEEPING CAR RATES.—One double lower berth from New York or Philadelphia to Chicago, \$5.00; from Chicago to Minneapolis, \$2.00, making \$7.00 through. Drawing-room to Chicago \$18.00, and \$7.00 beyond, making \$25.00 through.

Convenient trains and good connections for the return trip.

PENNSYLVANIA STATE VETERINARY MEDICAL ASSOCIATION.*

RESOLUTIONS ADOPTED AT THE ANNUAL MEETING, MARCH 4 AND 5, 1902.

National Horse Breeding Commission.

WHEREAS, It is proposed to erect a National Horsebreeding Commission for the purpose of encouraging the breeding of certain types of useful horses, and,

WHEREAS, The good results of the work of this Commission will be in proportion to the skill and expert knowledge possessed by its members, be it

Resolved, That we heartily approve the principle of the erection of a National Commission to give advice and assistance in respect to the breeding of horses, and be it further

Resolved, That we recommend that it shall be provided in the organic law erecting such a commission that the veterinary knowledge and skill of the country shall have membership representation.

The Board of Veterinary Examiners.

WHEREAS, It was the earnest desire of the members of the State Board of Veterinary Medical Examiners, of this organization, and of the large body of professional veterinarians throughout Pennsylvania, that the work of the Board, its methods, plans

* The minutes of this meeting were published in full in the June REVIEW, many of the reports of committees and papers presented followed in the July number, while the present issue contains the remainder of papers and reports of interest to the profession at large—those omitted being County Secretaries' reports and other matters having a purely local relation.

and especially the important work now in progress should continue along the same successful lines as heretofore, and,

WHEREAS, Results depend largely upon practical experience, which it requires time to gain, especially in the office of Secretary, with its immense accumulation of detail and data, besides important daily correspondence; therefore be it

Resolved, That the Pennsylvania State Veterinary Medical Association in session assembled extend its approval and a vote of thanks to our respected Governor, Hon. Wm. A. Stone, for his consideration and wisdom shown in the recent reappointment to the office of the Secretary of the State Board of Veterinary Medical Examiners, its old and experienced incumbent, Dr. W. Horace Hoskins, of Philadelphia.

Clinics at the Meetings of the American Veterinary Medical Association:

WHEREAS, The American Veterinary Medical Association has by its recent policy infringed upon the proper functions of State and local veterinary societies and, to a corresponding degree, has neglected its own appropriate field, be it

Resolved, That we are emphatically of the opinion that the discussion of questions of purely local and narrow interest is not a proper use of the time of the American Veterinary Medical Association, and especially in view of the fact that many questions of general and broad interest have to remain undiscussed owing to the crowded condition of the programme; be it further

Resolved, That we hereby protest against the continuance of the practice of holding surgical clinics under the auspices of and in conjunction with the meetings of the American Veterinary Medical Association. We deem such exhibitions of no educational value, calculated to obscure the proper functions of the Association and injurious to the profession in the locality in which they are held.

Dr. Rush Shippen Huidekoper.

WHEREAS, We have lost through death our beloved friend and colleague, Dr. Rush Shippen Huidekoper, one of the greatest builders of the veterinary profession in America, be it

Resolved, That with a sense of profound loss and sorrow and with the wish to record in permanent form our appreciation of the life and service of Dr. Huidekoper, a brief history of his career shall be prepared by the Resolution Committee and spread upon the minutes of this Association. Be it further

Resolved, That our sincere sympathy is extended to Mrs. Huidekoper in her great affliction.

Mrs. D. E. Salmon.

WHEREAS, Through the death of Mrs. Salmon, Dr. D. E. Salmon has sustained the loss of a loving and helpful consort and society has been deprived of a gentle, refining influence, be it

Resolved, That we offer to Dr. Salmon our deepest sympathy in his loss and bereavement.

Drs. Pearson and Ravenal.

WHEREAS, There has already been much valuable work done at the University of Pennsylvania and is now being done under the direction of our esteemed colleagues Dr. Leonard Pearson and Dr. M. P. Ravenal in the advancement of the study of tuberculosis and tuberculin, and

WHEREAS, This work has not only been most thorough but the reports upon said work most thoroughly systematized,

Resolved, That we hereby encourage the continuance of this work by showing our professional appreciation at this time by a unanimous vote of commendation.

The Live-Stock Sanitary Board.

WHEREAS, The splendid work of our Pennsylvania State Live-Stock Sanitary Board continues to attract attention and recognition at home and abroad, and

WHEREAS, Its generous support and approval by the people of our own State is a source of much gratification to this Association, therefore be it

Resolved, That these most excellent results have largely followed the continuance in place and in power of our colleague Dr. Leonard Pearson. Be it further

Resolved, That we commend most highly the action of our Governor in retaining our colleague in office in this board; our legislature in continuing its financial support to the work of the board, thus expressing confidence and appreciation of the successful work already accomplished.

Thanks to the H. K. Mulford Company.

WHEREAS, We have been instructed and entertained by a visit to the extensive and finely equipped and carefully conducted laboratories of the H. K. Mulford Company and have dined as guests of this company, be it

Resolved, That our thanks are hereby tendered to this firm and we assure them that the visit was very much enjoyed and their hospitality is appreciated.

. The Claude D. Morris Incident.

WHEREAS, The American Veterinary Medical Association

at its annual convention at Atlantic City, in September, 1901, placed itself on record as to the ungrateful, unprofessional and cowardly actions of Dr. Claude D. Morris, and justly visited upon him the condign punishment of summary expulsion from its roll of membership, and

WHEREAS, This Association in convention assembled approves of this prompt and proper action of that Association, and be it further

Resolved, That this Association in commending this action, equally regrets and regards with great concern, the attitude of the New York State Veterinary Society in continuing to condone this the most flagrant act of treachery in the history of veterinary medicine in America.

Unity Pledge.

WHEREAS, The State of Pennsylvania has developed a code of veterinary laws that in governing the practice of veterinary medicine and the control of the diseases of animals are the best in the country, but are still imperfect, and as knowledge grows and new conditions develop, will require alterations, and

WHEREAS, Such legislation as now exists was secured through the efforts of the veterinary profession of the State acting as a unit, all difficulties being settled in convention, and a united front being presented to the legislature, and

WHEREAS, Much of the failure to secure equally good conditions in other states, may be traced to dissensions in the profession itself, be it

Resolved, That we, the members of the Pennsylvania State Veterinary Medical Association in convention assembled, realizing the advantages resulting from a policy of unity and the suicidal folly of dividing and urging conflicting measures and recommending opposing candidates, hereby pledge ourselves and our Association, all matters of interest to us as a profession, and then striving as a harmonious and united body for the purpose decided to be the official purpose of this body.

SOME THOUGHTS ON MUNICIPAL MILK INSPECTION.

By J. M. CARTER, V. M. D., Philadelphia, Pa.

From my actual and practical experience in the milk business in almost all its various phases and from my observation as a veterinarian practicing in one of the first dairy districts of the country, I have had an opportunity to observe and know pretty nearly the actual character of the milk consumed by the people of a large city like this, and I think I can safely say that

if the consumer was to see the cow that produced the milk used on his table, and follow that milk from the cow to the table, he would use it very sparingly on his oatmeal and in his coffee, and least of all give it to his baby or sick child to drink. Of course there are some well-equipped dairies and careful dairymen, who are producing some wholesome milk, but I am speaking of the great majority of dairies as I have seen them. We all know how readily almost all germs grow and develop in milk, and how easily it becomes infected, and being consumed in the uncooked or raw state, it must be the medium by which the germs of many infectious and contagious diseases are taken into the system. The history of many epidemics of typhoid fever, scarlet fever and diphtheria, to say nothing of tuberculosis, can be traced to this source. It is hardly necessary for me to enumerate to you the places and mode in which milk becomes contaminated. It seems to me everything is dirty in connection with milk. The stables so often dark and damp and poorly ventilated with little or no drainage—veritable breeding places for disease. The cows packed as close as possible to economize room, and stables shut up tight in winter time to keep each other warm, and in the morning the air is so heavy with ammonia and offensive gases you can hardly breathe. The drinking water for the cows often comes from barn wells into which can drain the barn-yard or outbuildings.

At milking times the milk cans are often brought right into the stables or entry, and remain there until the milking is finished, in the atmosphere laden with dust and exhalations from the cows, and in fact I have often seen the milk cans remain in the stable all night in the winter time to keep the milk from freezing.

The cows are seldom or never cleaned, and covered with loose hair and exfoliating epithelium and their quarters and bellies plastered with dried or wet effete matter which is constantly falling into the bucket or being brushed off by the milker generally with dirty hands and dirty clothes, often wetting the teat with milk or froth which drips into the bucket; or I have seen the filthy habit of spitting on the hands to wet the teats, in fact very seldom is any regard whatever paid to cleanliness or hygiene. I have seen often thick milk, stringy milk, bloody milk, all dumped into a can together, and not even when the cow puts her foot in the bucket, is the milk seldom rejected.

The buckets and strainers are little improvement on the

other procedures, especially the latter, which are generally in bad repair, only catching the larger portions of foreign matter which have dropped in, allowing the bulk of the dirt to pass through and settle to the bottom of the can. On arriving in the city in not too overly clean cans, the treatment is somewhat better, but even here milk shipped in bulk is subjected to much exposure on the R. R. platform. It is often dumped around from one can to another and sampled and tasted before taking home. Many milk houses are well-equipped, but there are many very badly, and often next to the kitchen or living room with the doors constantly open.

The manner of handling bulk milk on wagons is especially bad, the cans being opened at every stop and exposed to the dusts of the streets and alleys, which is made up largely of dried horse manure and sweepings from houses. Milk in bulk leaves many temptations to the milkman. If a little short of supply how easy it is to fill up the can with skimmed milk or possibly water, and in the summer time preservatives which are found in nearly all milk houses, and in winter, coloring matter.

One who has never lived in the country or been associated with the dairy business does not know these things, and the majority of consumers of milk look only at the milk as it seems before them, and think only of the Jersey cow, the green fields, the buxom dairymaid and the old spring house with its cool crystal water. These are the thoughts that present themselves to the ordinary city resident whose knowledge of the dairy is only his recollections of boyhood days or a week's stay in the country in summer time. Such people only judge of the quality of milk by its color and amount of cream it raises.

Possibly a great deal of this milk, even if teeming with germs from filth and exposure, is drunk and consumed and does no apparent harm, but the manner and carelessness with which the bulk of the milk is handled certainly leaves many ways by which the milk may become contaminated with diseased germs and bring serious trouble, and I believe far greater than is as yet known. We have already some astounding reports from the few observers who have made a study of the spread of diseases through contaminated milk, but we can never know how far-reaching or how great the loss of health and life has been through our pernicious milk supply.

Dr. Hart and Dr. Freeman, of New York, have collected statistics of thousands of cases of diphtheria, typhoid fever and scarlet fever traced directly to the milk supply. The milk

becoming infected from the cow producing it or during its handling from the cow to the consumer, cholera, dysentery, acute milk poisoning and cholera infantum of children have been traced to the milk by the few who have traced the source of these diseases.

Dr. Freeman has classified diseases conveyed by milk to man into three classes:

1st. Those in which the diseased germs are introduced into the milk from the body of the diseased cow.

2d. Those in which the germs are introduced into the milk from some other source, either during or after milking.

3d. Those diseases caused by milk which contains poisonous agents developed by bacterial growth.

We shall consider the diseases under each class separately. By far the most important disease under the first class is tuberculosis. Although disputed by some, the vast amount of evidence and cases recorded, both circumstantial and positive, accidental cases seem to prove beyond a doubt that innumerable cases of tuberculosis in man have been caused directly by consuming milk from tuberculous cows. It is not necessary for me to cite these cases here. They are too familiar to you all.

2d. Anthrax. A few observations by infection from milk from anthrax cows have been made where the disease is more prevalent. In this country, where the disease is comparatively rare and generally so severe a form and pronounced symptoms that the milk is seldom used, at least I have no record of such.

3d. Foot and Mouth disease also comparatively unknown in this country. In England the disease has been caused in man directly by consuming milk from cows suffering from the disease.

Acute Enteritis. Although the number of cases are small three dogs seem to be direct evidence in two or three cases where the disease was traced directly to a cow suffering with this disease and transmitting the same to all those drinking her milk. If more observation were made I doubt more cases could be traced to the same source. Under this class also may be considered disturbances often seen in young children, as colic, cramps, vomiting and diarrhoea. These disturbances are often due to changes in the milk when a cow is suffering with garget or mammitis, even if the ropy, stringy, often pus-like milk from the effected quarter of the udder is discarded the remainder of the milk is found to be acid and has been often known to cause these disturbances when fed to infants. Similar results have

been noted on feeding infants on milk from cows unduly excited from any cause, especially at rutting periods, when the cow is allowed to race after other cows and often create much excitement in the herd. It is my belief that much of the digestive disturbances of infants is due to improper milk and that the cow furnishing the milk for the baby should have just as good care and food as a mother suckling her baby.

Certain poisonous plants when eaten by the cow may cause no apparent disturbance to the cow, but transmit the poisonous principle to the milk, which affects infants in different ways, depending upon the character of the plant eaten. The use of milk too soon after calving, before the milk is entirely free from colostrum, causes colicky pains, vomiting and diarrhoea in infants.

Every farmer knows that if you put a six weeks old calf on a fresh cow it will cause scours, and yet he does not hesitate to dump her milk into the cans after about two or three milkings when it takes three or four days at least to free the milk from colostrum.

In diseases of the second class or when the pathogenic organism enters the milk outside the cow. In all epidemics due to milk there are certain characteristics upon which the source of the epidemic is concluded, as seldom or never has the gerin of the disease been found in the specimen of milk obtained. The cases appear suddenly and many new cases each day, and the subsidence is equally marked when the milk supply is stopped. The houses invaded are widely distributed and not restricted to a particular part of the town. The houses of the rich are more apt to be affected than the houses of the poor, as the rich use more milk and have often a special water supply. The milk drinkers of the family are the ones mostly affected and is largely among children. In nearly all of the recorded epidemics a patient suffering with the disease has been found at the source of the milk supply. The most frequent of these epidemics is typhoid fever, of which Dr. Hart, of New York, gives statistics of fifty epidemics with 3,500 cases, and Dr. Freeman gives statistics of 53 epidemics and 3,226 cases. In my vicinity there has been three epidemics of typhoid fever, one with 50 cases and another 260 cases, and the other nearly 100. In the two former occurring at Elkton the evidence seems perfect and traced directly to the farmer serving the milk, he having typhoid fever in his family and the fever being confined largely to his patrons. In the latter case at my own home, although

there was typhoid fever on the farm serving the milk to the town, the cases did not confine themselves to his patrons, but existed among other milkmen's patrons furnishing the town as well. Although it is known that the milkmen often bought milk from each other, there was some doubt as to the source of the trouble.

Of scarlet fever, 41 epidemics with 2,393 have been reported. In nearly all these cases, as in typhoid, a patient suffering with the disease was found at the source of milk supply.

Of diphtheria Dr. Freeman reported 18 epidemics with 1000 cases. Not so large a number of the epidemics of diphtheria could be traced to a case of diphtheria on the farm supplying the milk, but with diphtheria in man the attack may be so light as to have been overlooked or possibly may have been of feline origin, as cats are known to suffer with a throat trouble closely resembling diphtheria, and wheezy old cats are very common around barns, often lapping milk from the buckets and cans. An epidemic of diphtheria has recently occurred in Wayne, in which nearly every case was traced direct to the dairyman's son, who was suffering with the disease.

Cholera epidemics have been traced through the milk supply to the farm furnishing the milk, either from a case of cholera occurring on the premises or in the water used to dilute the milk.

In those cases of typhoid fever and scarlet fever where no case existed on the farm, it may have been the water supply on the farm which was polluted, as the farm wells are often drained by barn yards or out-buildings, and it is a common custom for farmers to rinse the buckets and cans in this water and fill the cans with the rinsings.

Disease caused by milk which contains poisonous agents developed by bacterial growth. A few cases of this kind have been recorded, in which a large number of people were effected and on examination the tyrotoxicon of Dr. Vaughn was found in the milk. This poisonous ptomaine is the result of the growth of a certain bacteria, which is commonly found in cheese.

In summing up the evidence of the records just given, we may conclude that infection from milk is well established in typhoid fever, scarlet fever, diphtheria, tuberculosis, cholera, foot-and-mouth disease, acute enteritis, possibly anthrax. Acute milk poisoning in infants resembling cholera infantum is frequent, but seldom traced to the proper source.

Acute poisoning of adults by milk containing tyrotoxin has occurred. All this is known of the recorded epidemics that have occurred, while many cases are never recorded and many more are never traced to their source. I believe all this sickness and death, directly due to contaminated milk, is to a great extent preventable by proper legislation concerning the inspection of dairies and the handling of milk which is furnished to our cities and towns.

A study of these epidemics and the evils which have arisen and are arising every day teaches us:

1st. That wherever a communicable infectious disease is reported a rigid and careful inquiry into the sonrce .of the milk supply should be made.

2d. Proper legislation should be made concerning the inspection of dairies and the handling of milk.

3d. In each city or town should be a special committee or bureau to look after the milk supply, also to enforce the laws and to have charge of the inspection and to whom all outbreaks or deaths from contagious diseases should be reported that the farm and dairy could be examined in search of the cause of the trouble.

4th. That each farmer desiring to ship milk for consumption should be compelled to take out a license for the same and that his dairy, stabling, water supply and dairy apparatus were in proper condition to produce wholesome milk.

5th. There should be sufficient inspectors appointed and paid by the town to which the milk is furnished to inspect each dairy at least every three months to see that the cows are healthy and that the rules of the bureau are being enforced.

6th. That the methods of handling milk in bulk be abolished, and all milk used for food purposes to be consumed raw to be bottled and sealed on the farm, and that seal not broken until it reaches the consumer, and thus avoid much exposure and any tampering or contamination after leaving the farm. Also that each bottle should be stamped day and date and name of shipper.

7th. All whole milk shipped in bulk or skimmed milk which is largely used for cooking, but if used raw should be heated to at least 155° F. The skimmed milk which largely comes from creameries is certainly unsafe to feed a child, as it is subinitted to any amount of exposure, and preservatives are used very freely in skimmed milk. We have all seen too many cases of tuberculosis among calves fed on creamery skinned milk not to condemn it for infant feeding.

How a people in this enlightened age can go on year after year buying and consuming a product produced and marketed with such negligence as regards purity, cleanliness and healthfulness seems like a relic of barbarism. I believe it is our duty to mankind as veterinarians and knowing this evil to expose these facts on all occasions and in every way and to use every effort to establish the milk supply of our cities and milk supply in general on a proper basis, and if we succeed in this it will be one of the biggest and greatest works done to our credit.

VETERINARY MEDICAL ASSOCIATION OF NEW JERSEY.

The semi-annual meeting of the Veterinary Medical Association of New Jersey was held at Stetter's Assembly Hall, 842 Broad St., Newark, on Thursday, July 10th, and the following members responded to roll-call:—Drs. A. W. Axford, A. Brown, T. Earle Budd, D. J. Dixon, J. M. Everitt, J. B. Finch, W. J. Fredericks, J. O. George, James T. Glennon, G. P. Harker, W. F. Harrison, R. O. Hasbrouck, E. A. Hogan, J. B. Hopper, B. F. King, E. L. Loblein, Seth Lockwood, Wm. Herbert Lowe, A. P. Lubach, Chas. T. Magill, E. Mathews, James T. McDonough, James M. Mecray, John M. Mitchell, John P. Mathews, R. F. Meiners, E. R. Ogden, George W. Pope, Werner Runge, T. E. Smith, A. T. Sellers, M. M. Stage, S. S. Treadwell, L. E. Tuttle, and H. Van der Roest.

Hon. S. B. Ketcham, of the State Tuberculosis Commission, and Dr. Samuel Glasson, veterinarian in the U. S. Army and on a two months' leave of absence after a term of service in the Philippines, were in attendance as guests of the Association.

The following approved applications for membership were in the hands of the Secretary: Dr. Phineas Bridge, Montclair; Dr. G. Walter Dilkes, Mullica Hills; Dr. John L. McCoy, Sussex; Dr. John C. Petersen, Jersey City; Dr. T. B. Rogers, Woodbury; Dr. George B. Vliet, Hackettstown; and Dr. Thos. H. Ripley, Newark. Upon ballot the above were unanimously elected to membership. Drs. Bridge, Dilkes, Rogers and Vliet were present and were introduced by Dr. Lowe.

Great interest centered in the report of the Committee on Legislation, and as Dr. Budd, Chairman, recounted the work of the committee and the efforts put forth on behalf of the bill, which has now become a law and is for the regulation of the practice of veterinary medicine, surgery and dentistry in the State of New Jersey, no one present could fail to be impressed

with the fact that in organization there is power if in the organization there be a common aim and men who are willing to sacrifice time, money and energy without expectation of personal aggrandizement. The impression prevails that the story was not half told by Dr. Budd. Men who achieve are usually endowed with a corresponding modesty and it must be left to others than the members of this committee to fully narrate the difficulties met, the tact displayed and the untiring energy exhibited by those to whom the Association entrusted this important measure. He would be a dull man who in the light of the passage of this act could not see the veterinary profession of New Jersey reaching a higher plane. He would be a poor association member who after listening to the report of the Legislation Committee did not "enthuse" or feel proud to be affiliated with an organization which stood for advancement, and thus may be explained a feeling of optimism and dignity which pervaded the meeting held at Newark on the 10th.

After the report of the Legislation Committee had been received with thanks, Dr. Lowe was called from the room, and, with Dr. Budd in the chair, a purse was raised and a committee dispatched to purchase a sterling silver dinner set for presentation to Dr. Lowe in recognition of the effort put forth by him in behalf of the recently enacted law. The presentation was made at the close of the banquet and will be referred to later.

Under "New Business," Vice-President Budd again assumed the chair in order to enable President Lowe to present several matters which are here given as presented to the Association.

RECOGNITION OF THE PASSAIC COUNTY VETERINARY MEDICAL ASSOCIATION.

(*Motion by Dr. Lowe.*)

"MR. PRESIDENT:—I take great pleasure in reporting that ten regular practitioners of veterinary medicine, resident in Passaic County, met at my office in the city of Paterson on Monday evening, July 7th, 1902, and organized a Passaic County Veterinary Medical Association.

"It is the intention and purpose of this organization to be in affiliation with the Veterinary Medical Association of New Jersey, and it was resolved that the Passaic County Veterinary Medical Association should be to the veterinary profession of the county what this association is to the profession of the State.

"The members of the local organization pledged themselves

to do all in their power as individuals and as members of the society to advance and promote the common interests of the profession in the county of Passaic.

"The veterinarians of the various counties wherever there are a sufficient number of practitioners to warrant it, should organize county societies in their respective counties. Nothing in my opinion would strengthen the State Association more than live county societies.

"The organization of the Passaic County Veterinary Medical Association, I predict, is only the beginning of a movement to establish similar local organizations throughout the respective counties of the State. Mr. President, I have the honor to announce the Passaic Veterinary Medical Association, duly organized in said county (as the first born). I now move you, in behalf of the local organization that the Veterinary Medical Association of New Jersey now in convention assembled, officially recognize, declare and accept the said Passaic County Veterinary Medical Association as the county organization of the county of Passaic in the State of New Jersey, with all the rights and privileges belonging or appertaining to a county association, so long as nothing in its constitution, by-laws or code of ethics shall be inconsistent or conflict with the constitution, by-laws or code of ethics of the Veterinary Medical Association of New Jersey."

The motion was unanimously carried.

Dr. Lowe then spoke of the tireless and able efforts of Senator Wood McKee, which rendered possible the recent veterinary legislation in the State. Also reference was made to the evident approval on the part of Gov. Murphy of the efforts of the association to secure proper and necessary veterinary legislation. It was moved and carried that the by-laws be suspended and the above gentlemen elected Honorary Members of the Veterinary Medical Association of New Jersey.

MINNEAPOLIS PARTY COMMITTEE.

(Motion by Dr. Lowe.)

"It is fresh in our minds how only last September the representative veterinarians of America journeyed from far and near to Atlantic City, upon invitation of the Veterinary Medical Association of New Jersey, to attend the international veterinary convention held at this mecca by the sea. A cordial and hearty invitation is now extended by the veterinarians of Minnesota to the veterinarians of New Jersey to visit them on the occasion of the forthcoming annual meeting of the Ameri-

can Veterinary Medical Association at Minneapolis, Sept. 2d, 3d and 4th. The wives and families of members are included in this invitation. The social features of the annual meetings of the A. V. M. A. are becoming greater and greater every year. Specialists in every phase of veterinary science, as well as the general practitioner, will find much at this meeting of value and interest to them. In fact, no progressive up-to-date practitioner can afford not to attend this great veterinary meeting in September. Special railroad rates will be allowed. Let us, with neighboring States, form an Eastern party and charter a car. I move, Mr. President, that a Minneapolis Party Committee be appointed and that this committee be authorized to form a Minneapolis party which shall include veterinarians of neighboring States who may desire to join the party, and if a sufficient number pledge themselves to join the party to warrant it, to make arrangements and charter a special car." The motion was carried and the following were appointed a committee : Drs. T. E. Smith, of Jersey City ; James M. Mecray, of Maple Shade, and G. F. Harker, of Trenton.

This committee was able to report before the meeting adjourned that a rate of \$53.35 for the round trip, New York to Minneapolis and return, had been quoted to them by one of the transportation lines and that the above amount would include accommodations in the sleeping car provided 18 would attend.

The enactment of the new State law made necessary a change in the constitution, and accordingly an amendment was proposed and came up for first reading. This amendment provides that candidates for membership entering the profession on or after the first Monday in May, 1902, must be licensed by the State Board of Veterinary Medical Examiners and be registered in conformity with the provisions of Chap. 18, Laws of 1902.

Hon. S. B. Ketcham addressed the members on the growing need of well-educated and qualified veterinarians and urged that the efforts of the association to secure an educated and competent line of practitioners be continued in the future as it had been in the past.

Recognition of the veterinary profession in the military service was discussed, and the President urged that action be taken toward having it fittingly recognized in rank and title. The Secretary was instructed to communicate with the military officials at Trenton, calling attention to this condition.

At 1.30 adjournment was made for dinner and about fifty members gathered about the board in Stetter's dining hall. At

the conclusion of the dinner Dr. T. B. Rogers, on behalf of fellow-members, presented Dr. Lowe with a set of dinner table silver. In making the presentation Dr. Rogers said in part: "Dr. Lowe, you found us a scattered profession; you have bound us together. You found us without the pale of the law; you have placed a protecting arm around us. In behalf of the profession you have united, I have great pleasure in offering you this little token of our regard."

At the afternoon session Dr. James T. McDonough's paper entitled "The Horse's Foot" was discussed at length.

Dr. McDonough proved his statements by practical demonstration and answered all objections in a clean-cut manner, which strengthened the general impression that he is an authority upon lameness and shoeing.

Owing to the lateness of the hour, Dr. James M. Mecray's paper, upon "Some of the Necessary Qualifications for Producing Wholesome and Clean Milk," was not read, it being voted that the paper be presented by Dr. Mecray at the next meeting.

A ballot was taken to decide upon the place of next meeting. Some favored Lakewood and others Jersey City, but the majority of the ballots were cast for Trenton, and later the vote was made unanimous that the next meeting be held at Trenton on the second Thursday in January, 1903.

At 4 P. M. the meeting was adjourned to the Newark City Hospital, where Dr. Werner Runge, veterinarian of the Newark Board of Health, gave a demonstration of the methods of producing antitoxin serums, and Dr. T. B. Rogers performed three neurectomy operations. A vote of thanks was extended to Dr. Runge, Dr. Rogers and the hospital management for their kindness in making the clinic such a successful feature of the meeting, and the members departed for their homes well satisfied that the day had been a profitable one.

GEORGE W. POPE, *Secretary.*

PASSAIC COUNTY VETERINARY MEDICAL ASSOCIATION.

Drs. W. J. Reagan, M. A. Pierce, Alexander Machan, David Machan, T. J. Cooper, Harry K. Berry and William Herbert Lowe, all of Paterson; Dr. George W. Pope, of Athenia; Drs. A. P. Lubach and J. Payne Lowe, of Passaic, met at Dr. William Herbert Lowe's office, cor. Paterson and Van Houten streets, Paterson, N. J., at 8 P. M. on Monday, July 7, 1902, in

response to a call for a meeting of the veterinarians of Passaic county, for the purpose or organizing a Passaic county veterinary medical association.

Dr. William Herbert Lowe called the meeting to order at 8.30 P. M., stated the object of the meeting, and briefly outlined the advantages and benefits of a county society. It was moved and carried that a county organization be formed, and that a president, first vice-president, second vice-president, secretary and treasurer be elected. The election resulted as follows:

President—Dr. William Herbert Lowe.

First Vice-President—Dr. David Machan.

Second Vice-President—Dr. T. J. Cooper.

Secretary—Dr. Alexander Machan.

Treasurer—Dr. M. A. Pierce.

It was regularly moved and carried that an Executive Committee of five be appointed by the chair. The chair appointed on such committee Dr. George W. Pope (chairman), Dr. Harry K. Berry, Dr. Anthony P. Lubach, Dr. William J. Reagan and Dr. J. Payne Lowe.

Dr. David Machan moved that the next meeting be held July 14, and that the county association meet monthly thereafter; that the regular monthly meetings be held on the second Monday evening of each month. Carried.

On motion of Dr. Alexander Machan, the meeting adjourned to meet Monday evening, July 14, at the same place and hour.

An adjourned meeting was held at Dr. Lowe's office, Paterson, N. J., on Monday evening, July 14. President Lowe called the meeting to order at 8.30 o'clock.

Dr. David Machan was requested to act as Secretary, in the absence of his brother. The following practitioners of Passaic county answered to their names: Drs. Harry K. Berry, T. J. Cooper, John H. Degraw, William H. H. Doty, William C. Ferguson, M. A. Pierce, Paterson; George W. Pope, Athenia; William Herbert Lowe, Paterson; J. Payne Lowe, Passaic; A. P. Lubach, Passaic; David Machan and William J. Reagan, Paterson. Dr. Fredericks, of Delewanna, telephoned that he had been detained and could not reach the meeting in time, and requested the President to announce to the meeting that he would stand by whatever the majority did at the meeting. Dr. Berry stated that he had received a letter from Dr. Brooks (who is away on a vacation), and that he expressed himself as heartily in favor of the movement.

The President reported that the Veterinary Medical Association of New Jersey at its semi-annual meeting in Newark on the 10th instant, had passed resolutions officially recognizing the local organization as the Passaic County Veterinary Medical Association, duly constituted as such in full affiliation with the State Association. The State Association congratulated the veterinarians of Passaic county on starting the movement and on being the first to organize a county association in the State, and expressed the hope that the practitioners of other counties, whenever, and as the number of veterinarians would warrant it, would form county associations in their respective counties.

Dr. Reagan moved that the chair appoint a committee on constitution, by-laws and code of ethics, which was carried. The chair appointed on such committee Drs. Ferguson (chairman), Doty and Reagan.

Dr. Doty moved that the chair appoint a special committee to prepare and present a table of fees and rates of charges for professional services on similar lines with the table of fees of the Medical Society of New Jersey, for the government of the members of this association. Carried. The chair appointed on such committee Drs. J. Payne Lowe (chairman), Fredericks and Degraw.

Dr. Cooper moved that the matter of making a blacklist of "dead beats" be taken up at the next meeting. Carried.

Violations of the provisions of the new veterinary law (Chapter 18, Laws of 1902) were reported, and as the said enactment prohibits all persons not registered before the first Monday in May, 1902, from entering upon or continuing the practice of veterinary medicine, surgery, or dentistry in any of their branches in the State of New Jersey without being licensed by the State Board of Veterinary Medical Examiners and registered at the County Clerk's office in conformity with the provisions of the act, it was decided to procure evidence of violations in this county for the purpose of prosecuting offenders. The association decided to furnish evidence and otherwise aid the State Board of Veterinary Medical Examiners in convicting persons guilty of violating any of the provisions of Chapter 18, Laws of 1902.

It was moved and carried that Dr. J. Payne Lowe be requested to prepare and present a paper on "Veterinary Ethics" at the September meeting of the association (September 8th, 1902).

On motion, the meeting adjourned to meet at the next regu-

lar meeting night (Monday, August 11), at the same time and place.

DAVID MACHAN, *Secretary pro tem.*

This is to certify that we, the subscribers, practitioners of veterinary medicine, surgery and dentistry, of the County of Passaic, State of New Jersey, upon the invitation of Dr. William Herbert Lowe, met at his office, corner of Paterson and Van Houton streets, Paterson, N. J., on Monday evening, July 7, 1902, and organized a Passaic County Veterinary Medical Association, and that it is the intention and purpose of this organization to be in affiliation with the Veterinary Medical Association of New Jersey, incorporated April 15, 1885, under an act of the Legislature for the promotion of veterinary science and art. It is hereby resolved, that this society shall be to the veterinary profession of Passaic county what the Veterinary Medical Association of New Jersey is to the veterinary profession of the State.

We do further hereby pledge ourselves to do all in our power as individuals and as members of this organization to advance and promote the common interests of the profession in this county.

(Signed)

WILLIAM HERBERT LOWE,
DAVID MACHAN,
T. J. COOPER,
ALEXANDER MACHAN,
M. A. PIERCE,
GEORGE W. POPE,
HARRY K. BERRY,
ANTHONY P. LUBACH,
WILLIAM J. REAGAN,
J. PAYNE LOWE,
W. H. H. DOTY,
WILLIAM C. FERGUSON,
JOHN H. DEGRAW.

Signed
July 14th, 1902.

NEW YORK STATE VETERINARY MEDICAL SOCIETY.

The programme for the annual meeting, which occurs September 9 and 10 (week following the A. V. M. A.), at Brooklyn, is developing very satisfactorily, and there is every indication that the splendid records made in 1900 and 1901 will be eclipsed this year. While at the hour of closing the REVIEW forms, the arrangements are not sufficiently completed to produce a systematic programme, enough is known to guarantee a full literary calendar and a clinic that will be the best in its history. Dr. George H. Berns, at whose enlarged infirmary the surgical clinic will take place, has furnished us with the following list of demonstrations which he is arranging for:

"Ovariotomy in the Mare," "Ovariotomy in the Bitch, median line and flank," "Extirpation of the Membrana Nictitans from the Horse," "Radical Operation for Toe-Crack,"

"Radical Operation for Quarter-Crack," "Removal of Lateral Cartilage," "Arytenectomy," "Tibio-Peroneal Neurectomy," "Plantar Neurectomy, standing," "Peroneal Tenotomy," "Ophthalmoscopical Demonstrations," "New Method of Suturing Shoe-Boil after Extirpation," "Demonstration of the Use of Stocks," "Fixation of the Knee for Dropped Elbow, etc.," "Operations on the Tail," "Dental Operations," "Median Neurectomy," and others if time will permit. The operators who have agreed to be on hand are Drs. George H. Berns, Charles E. Clayton, W. L. Williams, E. B. Ackerman, George G. Van Mater, Charles S. Atchison, C. E. Shaw, H. D. Gill, William F. Doyle, Elishu Hanshew, Joseph R. Hodgson, R. W. McCully, Robert W. Ellis, and probably others who have not been heard from.

The September REVIEW, which will, on account of the meeting of the A. V. M. A., be published earlier than usual, will announce the completed literary programme. At this early date, however, we are enabled to announce:

"The Etiology of Shoe-Boil," Dr. G. J. Goubeaud, Brooklyn.

"Veterinary Dentistry," by Dr. Robert W. Ellis, of Manhattan.

"Retained Placenta," by Dr. W. L. Williams, of Ithaca.

Dr. T. S. Childs, of Saratoga Springs, is preparing a paper, while Drs. Veranus A. Moore, Simon H. Gage, and Pierre A. Fish, of Ithaca, will also have interesting contributions to the programme, and there will undoubtedly be no lack of papers, though it has been suggested that fewer papers, better discussed, are preferable to the opposite condition.

The arrangements for handling the programme are somewhat different this year than formerly. The convention will be called to order at 10 A. M., and the business of the society disposed of as rapidly as is consistent with thoroughness, so that the literary programme may be begun on reassembling after luncheon; and then the entire afternoon and evening will be devoted to the reading and discussion of papers. On the morning of the second day the members will assemble at the surgical clinic, where the forenoon and part of the afternoon will be consumed, after which the Entertainment Committee will take charge of the guests, and will keep them profitably and pleasantly occupied until it is time for trains.

THE ILLINOIS VETERINARY MEDICAL AND SURGICAL ASSOCIATION will hold its thirteenth semi-annual meeting at the

Brunswick Hotel, Decatur, Ill., August 14th and 15th. The following papers are announced : "Lymphangitis," N. P. Whitmer, Gardner ; "Dermatorrhagia," C. A. Hurlbutt, Stonington ; "Bone Spavin," W. J. Martin, Kankakee ; "Erysipelas," J. W. Marsh, Illiopolis ; "Nephritis," J. M. Reed, Mattoon ; "Entropion and Ectropion," S. H. Swain, Decatur ; "Eczema," V. G. Hunt, Arcola ; "Tetanus," R. W. Brathwaite, Champaign ; "Hysteria," W. A. Swain, Mt. Pulaski.

NEWS AND ITEMS.

DR. RICHARD H. POWERS has been appointed Veterinary Surgeon in the U. S. Army, and assigned to the Artillery service at Fort Walla Walla, Washington.

DR. AND MRS. W. HORACE HOSKINS, of Philadelphia, are traveling in the West, being in Minneapolis on July 10th, from whence they proceeded to Yellowstone Park.

DR. ROSCOE R. BELL, of Brooklyn, N. Y., has been selected to act as official veterinarian to the Bay Shore (L. I.) Horse Show, which takes place on the 8th and 9th inst.

DR. JAMES R. MOSEDALE, of Morristown, N. J., has recently completed the erection of a large veterinary hospital which he expects to equip with the latest appliances. The Doctor is also building a handsome residence.

HERMAN WELLNER, V. S., was dismissed by Commissioner Lederle, of the New York Board of Health, July 1, for irregularities in the conduct of his office of deputy veterinary inspector for Queens Borough. The veterinarian has, we understand, appealed from the Commissioner's action.

OREN D. POMEROY, M. D., formerly professor of ophthalmology at the American Veterinary College, died in May. At a meeting of the New York Otological Society of which the deceased was one of the founders, resolutions attesting the sorrow of the members and their appreciation of his worth, were adopted.

A CÆSAREAN HEROINE.—According to the *Berliner Klinische Wochenschrift*, June 2, a little woman with a rachitic pelvis had four separate Cæsarean operations performed upon her by the same surgeon (Charles). Three of the children, together with the mother are still living ; the other child died of bronchitis at thirteen months.

DR. GEORGE R. WHITE, of Nashville, Tenn., had the misfortune to have had his baby bitten by a rabid dog on June 3, the animal dying on the 6th. The doctor and Mrs. White took

their child to the Pasteur Institute, St. Louis, for the eighteen-day treatment, and there is every reason to believe that all danger has now passed.

PROF. SAMUEL T. MAYNARD, one of the oldest and most respected of the faculty of the Massachusetts Agricultural College, has been forced to resign by the trustees, and the alumni and friends of the college are incensed, and it is predicted that trouble is brewing for the trustees, a political board.

DR. M. C. McCCLAIN, Jeromeville, Ohio, is slowly convalescing from septic infection of both arms, contracted from a case of parturition in a cow which he was attending. He was confined to his room for three weeks, and describes his convalescence as very tedious. Dr. McClain's experience simply emphasizes the precautions which veterinarians should exercise under such conditions.

LYMAN & LYMAN, veterinarians, 332 Newbury Street, Boston, Mass., is the new firm just established, composed of Dr. Charles P. Lyman (late dean of the Veterinary School of Harvard University and of Lyman & Osgood), and his son, Dr. Richard P. Lyman, recently in practice at Hartford, Conn. A new building has been splendidly fitted up as a modern veterinary hospital, with accommodations for horses, dogs and cats. We wish them much success.

COL. ALBERT A. POPE, Boston, who a few years ago predicted that "the horse will be unknown in three years in cities of any size," is at present suffering with a broken arm, the fracture being caused by a fall from his horse. Col. Pope was first the apostle of the bicycle, of which he was an extensive manufacturer, and later invested much money in automobiles, but of late he has joined the Metropolitan Road Drivers' Association in the "Hub" and now remarks that "the horse is good enough for him."—(*Breeder's Gazette*.)

VETERINARY COLLEGES OF GREAT BRITAIN.—Students are now loose for a season, and the members who wanted to write M. R. C. V. S. after their names know whether they have succeeded or not. The condition of veterinary education in Scotland is peculiar. England has one veterinary college, Scotland has three. There is no reason in the nature of things why such should be the case, and certainly the superfluity of colleges is not due to the superfluity of students. This remark always applied, but it has acquired redoubled force during the past two years. Previous to that time a large proportion of the students attending the Scots colleges came from Ireland, but the new move-

inent in Irish agricultural education included a veterinary college, which has been started in Dublin under the control of Professor Metlam, who was transferred from the Royal (Dick) College in Edinburgh. This college has, of course, diverted the stream of Irish youths, and the Glasgow and Edinburgh colleges are to that extent the poorer. The oldest college in Scotland is the Royal (Dick), founded in Edinburgh three-quarters of a century ago by the famous Professor Dick. It is the only one of the three blessed with an endowment, but even with this and more than a third of all the students attending the Scots colleges, it is not self-supporting. The New Veterinary College in Edinburgh was founded by the late Principal Williams, between whom and the trustees of the Dick College there was some feud. The fame of the teacher attracted many of the best students to its classrooms, but now that he is gone it can hardly be expected to maintain itself. Even in Principal Williams' day the college was only kept going by the aid of a lucrative private and consulting practice. The same remark applies to all the colleges, and it can easily be seen that it is impossible to keep efficient teachers on such terms. The Glasgow college was started many years ago by Professor McCall, one of the shrewdest and most cautious of practitioners and experimenters, and at the same time as fine a lecturer as ever addressed a bench of students or an audience of farmers. The popular professor is getting up in years and naturally desires to get rid of his burden. The partial endowment of the Irish college with public money has naturally led to a demand for similar treatment to the Scots colleges. But the Government has a very effective reply. It cannot give grants of public money to private ventures. The consequence is that there are now before the country various schemes for bringing the colleges under public control, but it may safely be concluded that the first step towards the desired goal must be a union of all the Scots colleges. This would give Scotland a splendid position in the veterinary world, as it is admitted she is easily first in respect of clinical work and meat inspection. In all that concerns the protection of public health, Scotland is far ahead of England or Ireland.—(*Scottish Letter in Farmers' Advocate, Winnipeg, Manitoba, July 5.*)

ONE white foot: buy a horse.

Two white feet: try a horse.

Three white feet: look well about him.

Four white feet: go without him.

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Alex. Eger, 34 East Van Buren St., Chicago, Ill., Veterinary Publisher and dealer in Veterinary Instruments, Books, and Drugs, is the authorized agent for the REVIEW in Chicago and the Middle West, and will receive subscriptions and advertisements at publishers' rates.

IN perusing the "Bulletins" this month, for new features and new things that may be of value to them, REVIEW readers will find, among other changes, a change in the price of eserine, in the list of "Soluble Hypodermic Tablets, Veterinary," prepared by the Buntin Drug Co., whose advertisement occupies pages 10 and 11 (ad. dept.). The great increase in price of this valuable, and almost indispensable alkaloid in veterinary practice, we are informed, is due to its scarcity; so that it must be borne with patiently, hoping that it may soon settle again, within more convenient reach of veterinarians, who are obliged to employ not less than a grain at a dose.

FLUID EXTRACTS, at the top of the back cover page, attract no little attention; but they are attracting a much more earnest attention in their application to actual practice, by their uniformity of action. Parke, Davis & Co. "standardize them," that accounts for their uniformity of action, and dependable results.

ONE may almost grow poetic, when thinking of the preparations of Charles Marchand, "Hydrozone" and "Glycozone," as they are "ever the same," standard and excellent. No more need be said of them.

PLANTEN'S CAPSULES are sufficiently stout to withstand the summer heat, and are found very convenient for the administration of the liquid stimulant, camphor and ether (popular with veterinarians in exhausting fevers), for the same reason.

EIMER & AMEND, the leading metropolitan wholesale drug house in veterinary supplies, have recently demonstrated their especial interest in the veterinary practitioner, by preparing a "Veterinary Glycerin Suppository," convenient to carry in the satchel in little screw-top glass jars, and prompt in its results. It has proven itself to be even more than was claimed for it. It is economical as well as convenient and efficacious, as, after its expulsion, with the faecal matter or flatus, as the case may be, due to the absorption from its surface, it may be picked up, rinsed off, and returned to its jar, ready for the next case, and so continued until entirely absorbed.

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For Sale.—Valuable sea-shore and inland practice. Good locality and plenty of work the year around. Practice yielding \$3,000 and more per year for last 11 years. Present owner's health not good. Address ESTABLISHED, care of AM. VET. REVIEW, 509 W. 152d Street, New York.

Journal

AMERICAN VETERINARY REVIEW.

SEPTEMBER, 1902.

All communications for publication or in reference thereto should be addressed to Prof. Roscoe R. Bell, Seventh Ave. & Union St., Borough of Brooklyn, New York City.

EDITORIAL.

EUROPEAN CHRONICLES.

DECIDEDLY old Europe tries her best to imitate young America, but her attempts, good as they may be, are, *Dieu merci*, not as successful as they might be ; and, indeed, if our thermometers struggle hard to reach the nineties of New York, if the sun pours its scorching rays over our perspiring foreheads and chases everybody out of town, yet there remains a great difference between New York and Paris ; and, although once again sun-bonnets for horses, gaily ornamented with ribbons, have reappeared, scientific societies are still keeping open, but at the same time preparing for the general vacation.

To-day I was to the last meeting of the season of the Société de Médecine Veterinaire Pratique, as I would not miss the occasion of getting a good subject for this chronicle. On the programme was announced remarks from Prof. Nocard on tuberculosis. Our friends will remember that I have given them notice of a series of experiments which were to be made by the learned professor, to the effect of settling the question of the degree of virulence of both human and bovine tuberculosis. I was, however, disappointed. Prof. Nocard was not able to report, as the results could not be made known. The subjects on experiment are showing evidences of being infected, but to what extent cannot be said until post-mortems are made, which will

be in a very short time, most probably in time for my next.

At any rate, I do not think that they will vary much from what has already been observed by others. And among those I might mention the conclusions of Dr. A. De Yong, who contributes to the *Annales de Bruxelles* an article on comparative experiments upon the pathogeneous action on animals, especially those of bovine species, of the tuberculous bacilli of cattle and of man. The doctor has shown that (1) human tuberculous bacilli can produce tuberculosis in cattle; (2) that it can also produce it in all other domestic animals (sheep, goat, dog and monkey); (3) that tuberculosis given to those animals with human tuberculous bacilli is generally less serious than that produced by bacilli of bovine origin; (4) that consequently *it may be admitted that the bacillus of bovines possesses a superior virulence to that of human origin* [italics are mine]—this is what the experiments of Nocard will also prove; (5) that it cannot be accepted that the superiority of virulence of the human tuberculous bacilli so manifested in comparative experiments upon cattle, sheep, goat, dog and monkey, cannot be equally demonstrated for man; (6) that it follows that man, as a factor of tuberculous infection towards cattle, is of much less importance than cattle considered as a factor of infection for man; (7) and consequently, that to the human hygienic point of view, bovine tuberculosis deserves more attention than it has heretofore received.

* * *

“MEDICAL HEROISM.”—Under this heading one of our French contemporaries considers the case of Dr. Garnault, who, I wrote you some time ago, had offered himself for experimental purposes to Prof. Koch. Dr. Garnault having failed to obtain what he desired from the German bacteriologist, and, notwithstanding the advice that was given to him, decided to take the matter in his own hands, and proceeded to inoculate himself.

On June 17 last, assisted by three physicians, the operation was performed by the doctor himself. The substance of a tu-

bercular bronchial gland, taken from a tuberculous cow, was crushed in a sterilized mortar, laid over the forearm, where it remained attached by a bandage for two hours, the skin of the forearm having been relieved of its epidermis on a small surface by the application of a little blister.

What are the chances of infection or no infection? Will the result be negative or not? Perhaps the Doctor is refractory to tuberculosis. So numerous are the individuals that live in surroundings absolutely contagious, and yet do not become tuberculous, and, again, this negative result would not prove that bovine tuberculosis is not transmissible to man. And there the question still remains, until Dr. G., according to his promise, renews, continues and modifies his modes of infection. . . .

Let us then wait, and until the time has come the number of medical heroes will not be increased.

* * *

DR. PHYSALIX'S ANTI-DISTEMPER SERUM.—I am somewhat embarrassed. While, if from what I have seen here, and from what I have read, I am rather inclined to object to the Physalix mode of vaccination against distemper, I cannot ignore the efforts made by the Doctor, throw altogether aside a method which certainly has some value, and, above all, when I have read the paper and studied the numerous statistics that are presented in the *Progrès Medical* of last month. Think of it: a record of 1250 cases, with the form of disease, complications, etc., etc., and which, according to the conclusions of the author, brings down the mortality to 2.4 per cent. instead of 25 to 80 per cent. Of course, in the report little allusion—almost none, is made to the cases of death which have not been recorded, and those that are not are certainly severe against the new treatment. Is it not better to wait a while rather than to take now a decisive position? I believe it is, as we are just now in possession of results obtained by that never-tired worker, Prof. Lignières.

Indeed, at one of the last seatings of the *Academie des Sciences*, a paper was presented by Dr. Roux, in his name,

upon the subject of vaccination against pasteurelloses, under which name a group of diseases of the same type, most of which belong to the old group of hæmorrhagic septicæmias, has been described, and among which we have the typhoid fever of horses, distemper of dogs, chicken cholera, hæmorrhagic septicæmia of sheep, cattle or swine.

From researches that Prof. Lignières has made since 1897, he has been convinced that those diseases might be prevented by a true inoculation, and in this direction he has worked. An important question was whether each special disease required its special pasteurella, or if, for instance, that of chicken cholera would be active towards that of typhoid fever or of ovine pasteurellose ; or, again, whether it would be possible to use a common vaccine (polyvalent) in which would enter a great number of pasteurellas.

After having tested the ovine pasteurella, experiments were made as follows : (1) with a vaccine made by mixing several pasteurellas taken from sheep, affected with the natural disease, (2) a vaccine obtained with a single ovine pasteurella, (3) one prepared with one of the pasteurellas of bovine, canine, equine, porcine or aviary origin, (4) one which was made in mixing the pasteurellas of sheep, cattle, dog, horse, swine, and birds. The result was that this last vaccine of the six typical pasteurellas is truly a vaccine for all (polyvalent) and is applicable to all pasteurelloses indiscriminately.

Prof. Lignières cannot be considered as an enthusiast who may err by being carried away with the success of an idea. He has done his proofs, his work has been already appreciated ; why not accept what he says ? His mixed vaccine of six typical pasteurellas is applicable to all pasteurelloses indiscriminately. We can now be pretty sure to have shortly not only the means to vaccinate dogs against distemper, but also all the other pasteurelloses with a vaccination having a real practical value. Let us wait !

* * *

I will close to-day with one word which I obtained from in-

formation I gathered from American origin, and which, I regret to say, has escaped the attention of my co-laborers in New York. I refer to the death of an old member of the faculty of the old American Veterinary College, which I read occurred in March last, that of Dr. O. D. Pomeroy. The students and graduates of the years when Dr. Pomeroy was connected with the college will no doubt regret his departure. Although not a veterinarian, he was much interested in the work of the college; he was always attentive to his duties; he was liked by all those who followed his lectures, and his old saying "*Catch on,*" a conclusion after a delicate description, will always be pleasantly remembered. Dr. Pomeroy has done sufficient for the cause of veterinary education to deserve at least these few remarks.

A. L.

THE FALL VETERINARY CONVENTIONS.

The season for the annual meetings of the National and State veterinary medical associations is upon us, and the REVIEW congratulates the profession of the country on the prospects for populous and profitable gatherings in all quarters, as associational interest was never more acute than at the present time.

The American Veterinary Medical Association, which convenes on the 2d inst. at Minneapolis, Minn., gives promise by every method of anticipating a coming event of being the best from all points of view of any ever held by this organization. The full programme was published in the REVIEW for August, and a very attractive one it was. We here simply wish to say to our readers that the picture there drawn will be as nearly reproduced in the October number as we are capable of doing in the space which can be devoted to it, and that will be very liberal, for we will increase the size of that issue by many pages for that especial purpose. In the meantime, several hundred copies of the present number will be forwarded to Minneapolis, and each member and visitor will be supplied with one, so that the journey homeward may be rendered less tedious by the opportunity

to read and digest its splendid contents—the joint contribution of thinking veterinarians in various parts of the world. Its readers, who from one cause or another are prevented from attending, may rest assured that they will get the next best thing—a faithful story of the most salient features of this great gathering of veterinarians.

The New York State Veterinary Medical Society will meet this year in Brooklyn, on Sept. 9 and 10, the week following the National Association, and elsewhere will be found the programme in full. There is certainly material for every professional man in the State, and all signs point to the best meeting in the history of this society, and that is saying a great deal when the last two meetings at Ithaca are recalled. While the literary programme is not very extensive in number of papers to be presented, the quality is of a high order, which is much more desirable than quantity, and the very extensive and important clinic will probably surpass in interest any that has ever been held—not in the rare and difficult operations, which are more classical than practical—but those every-day procedures which are a part of every veterinarian's regular routine, together with demonstrations in the manipulation of improved apparatus for confining, casting and treating surgical cases. One of the good reasons why it is fortunate that the number of papers is limited is that the last one appearing on the programme is entitled "The Enforcement of Our Veterinary Laws," and we trust that the members will discuss exhaustively this very important subject, as the State is being rapidly overrun by men who have no right to practice in the commonwealth. If this were the only number on the programme for 1902 there would be ample material for earnest work in devising some substantial means of ridding the State of those who have taken their places here through freedom from prosecution, and in preventing others from following their example. Dr. Kelly, the author of the paper in question, has had a large experience in legislative matters, is thoroughly familiar with the situation, and is as competent to speak upon this subject as

any man in the State. We hope that the veterinarians in all sections will be in attendance to discuss this subject, so that there may be a concerted action in every county to accomplish some real good. Every member, and every qualified veterinarian in New York owes it as a duty to his profession and himself to be in Brooklyn on September 9 and 10.

Pennsylvania's great State Association will also be in semi-annual session in the week following the A. V. M. A., and her meetings are always occasions of great professional interest, not only to the veterinarians of the Keystone State, but to those of the whole country.

The Missouri Veterinary Medical Association has already held its eleventh annual meeting, which occurred at St. Louis on the 18th and 19th ult., and we are informed that it was a most valuable one, the papers presented being of a high order and quite numerous, while the clinic was most interesting and instructive.

Many other meetings will mark the advent of early autumn, and the REVIEW congratulates the profession on the very satisfactory state of veterinary progress as evidenced by these "signs of the times."

HOW AN M. D. ACTED AS A VETERINARIAN.—A farmer correspondent of the *Breeder's Gazette* includes the following story in a letter relating to "afterbirths": . . . "A neighbor had a very fine cow drop a very fine calf yesterday evening. On finding this morning that she had retained the placenta a physician was called in who sets himself up as a midwife. He set to work to remove the afterbirth I think at least thirty-six hours before it should have been attempted, and not knowing the first principle involved, he must have pulled at the cotyledons (instead of trying to peel them off) until he turned the womb wrong-side out and into the world. Then a runner was sent for a near neighbor of mine, who was known to be good at such work, and as he and I had worked together somewhat I volunteered to go with him, but before we got there the would-be doctor told them 'the cow would die anyhow,' and he cut the whole organ off. When we arrived the cow was dead, sure enough." . . .

ORIGINAL ARTICLES.

THE LIVING AND THE DEAD:

REMINISCENCES OF THE VETERINARY PRACTITIONERS OF FORTY
YEARS AGO.

BY ONE OF THEM.

(Continued from page 404.)

E. F. THAYER, M. D., V. S.

Of this worthy man, who by his own energy and his love for study, raised himself to be one of highest authority on veterinary medicine in Massachusetts, nothing can be said beyond what is written in the obituaries that we find in the periodicals of the profession.*

When we knew E. F. Thayer, he was already somewhat advanced in years, and the few times we had the opportunity to meet him—first at the Astor House gathering and later in New York or in Boston at the various semi-annual meetings of the U. S. V. M. A.—were always for us occasions of great pleasure. Besides all his good qualities of cordiality and friendship, the fact of his having been the first veterinarian to make a correct diagnosis of contagious pleuro-pneumonia in his State and to succeed in stamping it out forever from Massachusetts, is sufficient to give him a place among the first and most regretted pioneers of veterinary medicine in the United States.

* * *

C. M. WOOD, V. S.

When the delegations from Massachusetts came to New York at the meeting of organization of the United States Veterinary Medical Association, one of the delegates registered his name as Charles M. Wood, V. S., of Boston. He was a tall gentleman, Scotchman-like, full of activity, and from the start appeared as

* AM. VET. REVIEW, Vol. XIII, p. 285.

conceited. Yet, he had a kind and genuine conversation which seemed to imply a strong desire to make good friends. We know very little of him! He had a certain reputation ; had been connected with the attempt made by Mr. Dadd to establish the Boston Veterinary School, and we found him from the start ready for discussion, arguing for the sake of argument, supporting an opinion at one time to fight it but shortly afterwards. Was it evidence of solid knowledge or a desire to make himself conspicuous ?

An old acquaintance of his has furnished us with the following sketch, which describes him more thoroughly and with more justice : "I have known C. M. Wood from the time I was a boy, more particularly during the years 1860-61, when I rode with him and studied with him. He was a great student, and during the time I knew him best, he was usually to be found at home studying when not attending to business.

"He came here from England, was entirely self educated, and it was a great credit to him, for his education was thorough. It had been with him a constant tread-mill of application, backed by a capacity for the proper requisition of knowledge of a professional character, which enabled him to become proficient in the details of the profession.

"I cannot speak too strongly of the untiring efforts, the bull-dog tenacity of purpose which carried him through a task, which few men would have accomplished one-half as well as he did. He had the ambition and the laudable desire to become more than an automaton, practicing a profession in a stereotyped hum-drum sort of way, for a stipend, more or less.

"His aim and motto was 'Excelsior.' But there were other sides to his character and development as a veterinarian, and particularly as a practitioner. I must speak the truth.

"In treating acute forms of diseases of the internal organs, he was a failure ; and he was dogmatic and authoritative in regard to the choice and method of administering medicine as one could be. He knew Percival's treatment and some other

medicine of similar character ; he did not want to know any other.

" He was brusque, antagonistic, and as aggressive as one could be. The results could not be otherwise than unfortunate to an individual having such traits of character. He was constantly in hot water and had but a few associates. Many of those were unfriendly toward him, but he never yielded or ran away.

" His practice was quite limited, as compared with what it might have been, if he had had a little more elasticity. But wherever he went or whatever he did, it was with unbroken ranks ; you might break his sword or disarm him, but you would not conquer him."

This is a severe judgment, which our correspondent has given us, and yet from what little relations we or his colleagues had with him, whether as President of the Association or at the meetings, those who remember him will say that it is not exaggerated.

He had an office in the stable of Josh Seward, on School Street, Boston, Mass., where the Parker House now stands. Josh was an original genius and full of frolic. Wood enjoyed a joke when he was not the victim, but on the whole was not more unforgiving than the average man. He had a medicine chest in a little room over the office, and among other things this chest contained a number of cathartic balls, made according to Morton's formula. They were quite soft and he used from ten to forty of them when any one else would use one. One day Josh took the balls out of the box and replaced them with pieces of sausages done up to closely imitate them. The next day he asked Wood to give " Dandy " (one of his horses) a ball, which he proceeded to do. After twenty-four hours, no response. Josh said, " Give him another." After twenty-four hours more, " Give him another," Josh said. Wood rolled up his sleeve and was about to give him another, when Josh seized his arm and took the ball, and opened it to show it to Wood, exclaiming that he " thought it bad enough to have his horses get Wood's

regular medicine, without giving them sausages." On the same day it was said that Wood made a mistake in giving the wrong horse one of these balls, in another stable, and the horse died suddenly that night, from some other cause, which affair caused a good deal of comment and many a laugh at Wood's expense.

* * *
ROBERT WOOD, V. S.

Brother of Charles M.—he was for all of us only his brother by birth, for physically and in general appearance they were not. Robert was of smaller stature, and as noisy and restless as his older relation appeared quiet, and, yet, although of a somewhat cool and at first sight distant disposition, when once you knew him he proved to be a man of a general all-around character, amiable and friendly.

Robert was a fair student, and had a capacity for the proper gathering and storing of useful knowledge. He reasoned better than his brother, was deeper and more analytical, while Charles leaned more toward the synthetical.

What he learned, it paid him to learn it—what Charles learned was a pleasure and a gratification without regard to cost or effort or whether he could make profitable use of it.

At our meetings, Robert was willing to discuss, and it was a pleasure to reason with him; contrary to his brother, he could be convinced; Charles, hardly ever.

Robert Wood had no special hobby to ride; he was a good friend, an all-around useful man of far more than excellent ability. A good practitioner, unfortunately, like many among us, not possessed of extra-developed commercial capacity, and yet he managed to be quite a successful business man.

Like his brother, he had been President of the Association, and was a good worker in its behalf. Like most of the veterinarians practicing in Massachusetts in those days, Robert was anxious and ready to do all he could in behalf of his profession.

Robert Wood one day invited the father of Dan Walton (a celebrated trainer of trotters in those days) to go with him to

dinner at his house. When they arrived there Mrs. Wood had "company," two old and very precise females, who were also to stay to dinner. Robert Wood took Walton out into the wood-shed and they had a drink, which would do for ceremony; but Wood was afraid that Walton would make use of some expressions at the table which would shock the ladies. Walton could draw the line between the ludicrous and the indecent as finely as any man. He promised, however, not to offend, but to speak and act as "genteel" as he knew how. Wood served the dinner, the ladies first, then Walton and himself. Things were going along smoothly, when Walton, who had spoken and acted under restraint, said in his ordinary loud tone: "Well, Doctor, there's what I call a good potato! In about every place that I have dined this season, the potatoes have tasted like a box of itch ointment." Robert Wood enjoyed telling this story, and he said all the ladies appreciated it properly and never forgot it. At first they were somewhat dazed, but upon a second thought, they laughed long and loud.

* * *
WILLIAM SAUNDERS.

Towards the end of a very hot day, William Saunders, whose "circuit" was quite a long one any day, stopped his team at Frank Codlidge's farm-house in Brighton, and, after looking at a case, he was invited by Frank to have a glass of cider. "Its nice and cold, and it will do you good," he said. "Wait, now, and I will bring it up from the cellar." Instead of cider, he brought up a large glass of currant wine, which was quite old and "alcoholish." Saunders drank it and said he had never had so pleasant and refreshing a drink. Down cellar again went Frank and brought another glass, which, after some little urging, Saunders emptied again, and lighting a cigar, bid good-bye and started to drive home. Saunders rarely drank any liquor, and Frank knew it. He reckoned the Doctor would feel the second glass, but resolved he would see for himself. So he hitched up a horse into a buggy and drove so as to go by a shorter route than the Doctor would take, and

arrived first at the American stables, where the Doctor's office was located. He got out of his carriage and hid behind it just as the Doctor drove in. Well, he had "responded to the medicine," as he said himself, he "had been blind all the way, in five minutes after leaving Frank's house." It was necessary for two men to help him out of his wagon, and then he had no legs. He saw Frank grinning at him, and said: "Damn you, Frank, if I could stand, I would try to put you in that horse trough."

The day was afterwards referred to as "Saunders' Buena Vista and 4th of July." They laid the doctor down on some blankets for a couple of hours, and then took him to the depot to take the train for Salem, where he lived.

* * *

APPENDIX.

In the preceding pages I have recalled, with two exceptions only, reminiscences of some of the veterinarians who lived forty years ago and were present at the meeting at the Astor House in 1863.

But others were there also. Unfortunately, I was less familiar or less intimate with them.

E. Ripley, V. S., of Maine; G. Penniman, Sr., V. S., of Worcester; Robert Saunders, V. S., of Salem; W. E. Wisdom, V. S., of Wilmington, Del.; and those two excellent friends, J. B. Rayner, V. S., and Thomas B. Rayner, V. S., both of Pennsylvania.

Of all, my recollections are as pleasant and friendly as with those of whom I have spoken in the preceding pages; and yet I must leave to others better acquainted with them, the task of speaking of them.

There were other veterinarians also in those days practicing in New York: *W. Lockhart, M. R. C. V. S. E.*, who, I believe, never laughed, and was as stiff and freezing in his relations as his brother, *Alex. Lockhart, M. R. C. V. S. L.*, was friendly and congenial; *C. Pilgrim, M. R. C. V. S. L.*, who let the celebrated

trotter George M. Patchen die with strangulated inguinal hernia, which he had failed to reduce; *W. Dixon, V. S.*, who commanded the largest sporting practice of New York State, and invented (?) the wonderful condition powder sold yet, and *E. Nostrand, V. S.*

None of these latter veterinarians belonged to the U. S. V. M. A.

THE END.

JUST A SAMPLE OF MANY SUCH TALES.—A big Newfoundland dog fought off a burglar Thursday night and prevented the robbing of the home of J. S. Hynes at 712 Ann Avenue, in Kansas City, Kas. Mr. Hynes is city manager for the Kaw Valley Coal & Lime company. He is a member of the Fraternal Order of Eagles. Thursday night he attended a meeting of that order, leaving Mrs. Hynes and their two children at home with the dog "Sport," on watch in the hall. At about 12 o'clock Mrs. Hynes, who had retired to her chamber on the second floor, heard someone insert a key in the lock of the front hall door. She thought it was her husband coming home and arose, intent on going to the head of the stairs to call to him. She changed her mind, however, when she heard the door open gently and a soft foot fall in the hallway; for a moment thereafter there was a noise that made her blood run cold. The faithful dog sprang upon the burglar. There was a scuffle below, which lasted fully five minutes, accompanied by calls for help from the intruder, heightened now and then by the noise of smashing pieces of furniture, and finally ending with a crash of broken glass. The burglar, finding it impossible to open the door which he had closed, sprang through the glass, carrying sash and all with him, the dog following in hot pursuit. Fifteen or twenty minutes later Mr. Hynes returned home. He stumbled over a pile of broken glass on his porch and on entering the hall was greeted with a sorrowful whine from his dog. He started upstairs to see his wife, but tripped and fell over a piece of broken balustrade. Then he lighted the gas and to his amazement found everything in the hallway in disorder and a blood stream on the floor. Upstairs he found Mrs. Hynes, crouching beside her sleeping children in fear and trembling. She succeeded, finally, in telling how it all happened. There is one dog in Kansas City, Kas., which no amount of money can buy, and he is owned by Mr. Hynes.—(*Kansas City Star, Aug. 16.*)

RINDERPEST IN SOUTH AFRICA.

CONDENSED REPORT OF THE PROCEEDINGS OF THE INTERNATIONAL RINDERPEST CONGRESS, HELD AT PRETORIA, S. A., AUGUST, 1897.

TRANSLATED AND CONDENSED FROM PROCEEDINGS OF THE CONGRESS BY JOHN M. PARKER, D. V. S. (MCGILL), ATTACHED A. V. D., REMOUNT DEPOT, WORCESTER, C. C., S. A.

At the Congress representatives were present from Orange Free State, Cape Colony, Natal, Transvaal and Portuguese and German possessions.

Among other matters, the different methods of controlling rinderpest were discussed. Dr. Theiler, the Transvaal Veterinarian, reported on the various methods of preventive inoculation.

"For a long while," he said, "many people have been convinced that the only practical method of treatment consisted of preventive inoculation; in other words, to 'salt the cattle artificially.' Primitive methods of obtaining this result have long been employed by the farmer; one of the earliest was to smear the nostrils of the animal with dung from infected cattle. Gradually injections of blood and serum were substituted, but the results were unsatisfactory, the poor results being probably due to the fact that the virus of rinderpest has since been found to be very susceptible to light and heat, two hours' exposure to sunlight completely destroying its virulence. The result, of course, was that the inoculations produced only slight immunity. In other words, the cattle were not properly 'salted'."

Dr. Theiler then referred to Koch's method of inoculation. This method consists in the inoculation of sound cattle with 10 c.c. bile taken from an animal that has just died from rinderpest. The amount of bile to be injected was fixed in the following manner: When sound animals are injected with 1, 2, 3, 4, 5, or 10 c.c. of bile from a rinderpest animal, and when ten days later these same animals are inoculated with 0.2 c.c. of serum, the animals receiving less than 10 c.c. of bile become

sick ; those receiving 5 c.c. or more recovered, and can be looked upon as "salted." This immunity, according to Dr. Koch, is of such a nature that after four weeks the animals could resist 40 c.c. pest blood without any trouble.

When several animals are injected with 10 c.c. of bile, and afterwards each animal in turn, at intervals of two days, is inoculated with pest blood (that is to say, an animal is inoculated the 2d, the 4th, the 6th, the 8th, and the 10th day respectively) it has been found that animals inoculated before the fourth day died from rinderpest, those inoculated four days after recovered, and those inoculated six days after were unaffected—*they were immune*; the salting process thus evidently taking place between the fourth and sixth days.

After the bile injection there is usually a local swelling at the point of inoculation.

It would be interesting to know whether the amount of swelling present has any relation to the "salting" process; that is to say, whether the amount or presence of the swelling indicates whether the animal has been salted or not.

As a result of the discussion following the reading of this paper, the following conclusions were adopted :

I. When used as recommended, bile does immunize cattle and *does not cause rinderpest*.

II. Immunity begins from the sixth day and increases from the tenth day.

III. Animals are not protected by the vaccine during the first few days following the bile injection. For this reason when an infected herd is inoculated new cases will crop out up to the twelfth day.

IV. When animals contract the disease *soon* after the inoculation they are more liable to die than when the symptoms appear later.

Dr. Turner, Natal Government Veterinarian, in referring to Koch's method, said that he was satisfied of its success. He believed that Koch preferred the bile injection to serum because of its more lasting effects; serum was not only less active, but

it was also uncertain and inconstant in its action. Of course, it is not fair to take bile from animals found dead, because in that case the bile will frequently be in a state of putrifaction and useless for inoculation purposes. In such a case it is better to use blood serum for inoculation.

The most favorable time to take bile is from the sixth to the seventh day of the fever. The temperature of the inoculated animal from which bile is to be procured must always be taken every morning and the days counted from the moment the temperature begins to rise. The dose of infected blood from an infected animal must be moderate and should not exceed 1 c.c.

Some persons thought that inoculated or vaccinated animals could spread the disease; this fear was groundless; an animal vaccinated with bile could mix with impunity with unprotected animals without producing the disease. After animals have been inoculated with bile they are still liable to contract the disease until the end of the sixth day or even of the seventh or eighth day. So that when a herd became infected, after inoculation and before the seventh or eighth day, the bile inoculation was often undeservedly blamed for the introduction of the disease. For example, a herd of 133 animals, after being exposed to infection, were injected with bile on May 9. All of the animals became sick and 100 died. Fortunately it was known that on May 5 one of the animals in this herd had died from rinderpest, showing that this herd was infected before it was injected; but if the injection had taken place on the 1st, instead of the 9th of May, it is almost a certainty that the bile injection would have been blamed for the outbreak.

Repeated experiments have shown that it is not till ten days have elapsed that the animals become immune; after ten days have elapsed the inoculated animals do not become infected either by injection or by actual contact with diseased animals.

Unfortunately, immunity after bile injection *is not lasting*; experience has shown that while the period of time varies, yet it cannot be considered to protect the animals for more than three or four months. Fortunately, however, after an animal

has once been inoculated the disease takes only a mild form and the animal usually recovers.

Dr. Turner then reported the case of a herd of cattle inoculated with bile injections. Four months after inoculation they began to develop symptoms of rinderpest ; the number of cases kept increasing, and each animal was then injected with 30 c.c. defibrinated blood from salted cattle ; from that time only one more animal became sick and none died.

In discussing bile and glycerine injections, known as the Edington method, Turner claimed to have better results and longer immunity with pure bile than with the bile and glycerine mixture.

In a communication to Dr. Turner, Edington briefly describes the glycerine method as follows. He says : "Here we use all kinds of bile for glycerinated bile ; it does not matter whether the animal is only sick, or dead, or killed at the end of the period of relapse. Of course when putrifaction has set in the bile is not used. The bile is mixed with glycerine in proportion of 2 to 1. The bile is all mixed together and it should only be used after eight or more days have elapsed after mixing." "Ten days after the glycerine and bile injections the animal should receive an injection of 0.2 c.c. defibrinated blood." "Good results are obtained if we mix one ounce defibrinated pest blood with one-fourth flask sterilized water." "The results from this method were good. Ten animals inoculated with bile and afterwards injected with defibrinated pest blood, with one exception, all withstood the disease. Twenty-four animals were inoculated by this method at Kimberly ; no deaths resulted ; some of these received 5 c.c. pest blood, with no bad result. 125 animals were inoculated by this method at Belmont ; no deaths. Similar results followed the inoculation of 60 animals at another farm."

Dr. Turner dissented from Edington in the advisability of using glycerinated bile ; he preferred pure fresh bile.

An important discussion then arose as to the possibility of the infection of a clean herd through bile injection, many farm-

ers objecting to the inoculation because of the fear of introducing the disease into districts and farms where it had not previously existed.

The best opinion seemed to be that most of the unfavorable results were due to carelessness on the part of those entrusted with the work of inoculation. When rinderpest appears after the bile injection, it is not a result of the influence of the bile itself, but it is an infection of the animal by contact during the operation, and is due either to carelessness or ignorance on the part of the operator.

Previous to the application of the Koch method, 85 per cent. of the cattle died. In consequence of the introduction of the Koch method, only 10 per cent. now die.

The following resolutions on the Koch method were then passed by the Congress :

I. Bile acts as a mitigating virus, a vaccine that is able in the majority of cases to give a certain, but temporary, immunity.

II. After bile injection it is possible for cattle to contract the disease with fatal results. The circumstances that excite the appearance of the pest infection are not yet clearly determined.

III. Bile cannot be said to protect the animals effectually from rinderpest, but inoculation with bile is able to delay the appearance of an epidemic in districts where it has not yet appeared, and when applied under these circumstances it does important service.

Later it was resolved that :—

" Animals injected by the Koch method and exposed to rinderpest four or five months afterwards are not immune, but when they do contract the disease, it usually appears in a mild form and the percentage of deaths is not usually greater than 5 to 15 per cent."

* * *

INOCULATION WITH PEST BLOOD.

Report by Drs. Dantzig and Theiler to the Transvaal Government, 1897.

The first and most important point to consider is, at what

time the blood of salted cattle is in the best condition for immunizing purposes.

Experience has shown that soon after recovery from rinderpest the blood begins to acquire its protective qualities, and that the greatest power is attained from six weeks to two months after recovery. It retains this power unchanged till the fifth or sixth month, when it deteriorates. So that it possesses its most active protective properties between the second and fourth months after recovery, and it is at this time that it is most suitable for purposes of inoculation.

The most efficient blood is to be had from animals that have been most seriously sick, and this protective quality can be further increased by inoculating these already salted cattle, with pest blood from other salted animals.

Hitherto one of the difficulties has been to secure sufficient blood from salted cattle, but this difficulty is easily overcome when the blood of artificially salted cattle is used, and by submitting the salted animals to successive injections of pest blood, we are able to get a blood that has great protective qualities.

In using the blood to protect a herd exposed to infection, the first injection should be made immediately after exposure to disease. The second inoculation should be made five or six days later, or at the end of the period of incubation. If postponed till later the inoculation would not have as good an effect, as infection would be too far advanced.

The immunity conferred by salted cattle is only temporary. *In order to acquire lasting and powerful resistance, the inoculated animal must contract at least a slight amount of disease.*

The following experimental work was carried out under the direction of the Transvaal Government :—

I. At Field Coronet, A. Botha's farm : (a) Five animals were selected. One calf was injected with blood of cow salted three months previously and twice afterwards injected with pest blood.

Two small oxen injected with 8 c.c. blood from a cow twice injected previously with pest blood.

Two large oxen injected with 10 c.c. blood from above cow.
All these animals are found to be salted.

(b) Eighty animals first injected with bile, then each received two injections of 100 c.c. blood from three oxen salted three months previously and afterwards receiving pest blood injections.

All these animals were found to be salted.

The disease appeared fifteen days after the herd was inoculated with the bile. At the time of the inoculation with blood from the salted cattle, which followed the first bile inoculation, 56 of the 150 oxen which had received the bile inoculation were dead, a number were ill and new cases were occurring daily.

After the remaining animals had received two injections of the blood of salted cattle *no more deaths occurred*.

II. Sixty-five cattle belonging to Paul Kruger and Prinsloo were twice inoculated at an interval of six days with 100 c.c. blood. For the first inoculation blood of old salted cattle was used. For the second inoculation blood of two oxen, inoculated two months previously with pest blood, was used. All these animals were more or less seriously ill. Five calves died, the remaining 60 all became salted. It is interesting to notice that the five that died became sick between 15 and 20 days after inoculation, the others between 8 and 15 days after inoculation.

III. Ten oxen belonging to the same owners, inoculated only once with 100 c.c. blood from an animal inoculated two months previously. Of the ten inoculated 5 became salted and 5 died.

V. Seven animals inoculated—six with two successive inoculations of 100 c.c. and one with only one injection of 100 c.c. blood from an animal inoculated two months previously with proved pest blood. The ox receiving the single injection died; the others recovered and became salted.

VI. Thirty animals all suffering from rinderpest received a single injection of 100 c.c. blood from an ox salted two months previously and proved with pest blood. Of these 30 animals, 20 died and 10 recovered.

VII. Seventy head of cattle inoculated with bile; the disease appeared twelve days later. On the appearance of the disease, when all the animals were more or less sick, they were inoculated three times at intervals of eight days with blood from oxen salted three months previously. Of the 70 animals inoculated, 9 died and 61 became salted.

IX. Two sick oxen, one of which was seriously sick, received, the one 600 c.c., the other 200 c.c. blood of a salted animal. Both animals recovered.

Experiments made on some thousands of animals have shown that if properly applied before the disease appears, from 80 to 90% of animals will recover, if inoculated with blood from properly salted cattle.

In preparing an animal for salting purposes about two months are required. An ox properly prepared, after three or four months, will give a sufficient quantity of defibrinated blood to inoculate 25 head of cattle every 14 days for two months. So that in two months' time the defibrinated blood from a well prepared ox will be sufficient to inoculate 100 head of cattle, each of whom in the two months following its salting will in turn produce sufficient blood to inoculate 100 more. So that in about six months' time an almost unlimited quantity of pest blood could be procured.

* * *

The following points were then agreed on by the Congress:—

I. Blood, taken from animals that have withstood the disease for ten days after the temperature falls, can still be virulent blood.

II. When an animal has become salted the greatest protective power is developed about two months after inoculation. This power remains about the same for two or three months, when it gradually weakens; so that in about ten months the blood has only a very weak salting power.

III. Repeated injections of pest blood increases the protective power of the blood of salted cattle, and one dose of, say, 40 c.c. defibrinated blood from a well-prepared animal, may be

more efficacious than 400 or 500 c.c. of blood taken from an animal badly prepared.

IV. When animals that have recovered *naturally* from an attack of rinderpest are inoculated with virulent pest blood, there is rarely any perceptible thermic reaction. On the other hand, the injection of pest blood to artificially cured cattle will almost always result in the characteristic temperature reaction.

V. The passive immunity given to cattle by the injection of blood from old salted cattle is of short duration (10 to 20 days) and becomes daily weaker.

VI. According to the results communicated by the Rinderpest Committee of the South African Republic, sound animals receiving two injections of 100 c.c. blood from well salted cattle, at six days' interval, become sick after the first injection, and of these, 90% recover.

VII. The injection of strong defibrinated blood from salted and well prepared cattle is a preventive, and even fiercely attacked cattle recover.

VIII. The immunity produced in animals treated in this way is an efficacious and lasting immunity.

The Congress were also agreed "That animals first treated with bile and that afterwards developed rinderpest, recovered more easily under the influence of curative blood than animals that underwent no previous inoculation."

In employing the bile method the following points should be observed :

I. Bile may be obtained from cattle dying of rinderpest, whether caused by inoculation or acquired naturally.

II. The bile must be procured only from recently deceased animals, from those whose sickness has not lasted more than seven days, or from those killed while in *articulo mortis*. No bile should be used that has the least smell of putrifaction.

III. To procure a sufficient supply of bile, the establishment of stations is recommended where cattle could be inoculated with pest blood. After inoculation the temperature of these cattle should be taken daily. The bile should be pro-

cured six days after the commencement of the fever or ten days after injection.

IV. Color of bile is of little consequence, but care should be taken that no blood gets into the bile secured.

V. Bile must be kept in a cool place and at least 48 hours should elapse before it can be used.

VI. The flask or vessel receiving the bile must be thoroughly washed and rendered aseptic before being used ; after being filled the outside of the flask or vessel should be again disinfected.

VII. As a precautionary measure it is advisable that persons making the post-mortem and securing the bile or who in anyway come in contact with the diseased animals should *not* be present at the inoculation of the sound animals with bile.

VIII. The different biles to be used for one herd should before use be thoroughly mixed in one vessel, so as to secure uniformity in the character of bile injected.

IX. Animals becoming sick after the bile injection, can be inoculated with defibrinated blood from salted cattle with good results.

* * *

In August, 1901, rinderpest having broken out in the Orange River Colony and Basutoland, and extended to the borders of Cape Colony, the Agricultural Department in Cape Colony published a pamphlet to the farmers on the subject. This pamphlet included an extract from the Government Veterinary Surgeon of Cape Colony, who after the outbreaks of 1896 and 1898 wrote as follows :—

“ The method of inoculation which I would recommend in future sporadic outbreaks of the disease is briefly as follows :—

“ *Infected Herds.*—These should be inoculated at once with either serum or glycerinated bile ; every animal which indicates infection by a rise of temperature should receive a large dose of not less than 100 c.c. of serum, or 30 c.c. of glycerinated bile ; the latter should by preference be injected into the jugular vein, so as to secure its immediate action. Then from eight to twelve

days after all the animals in the herd, which give no indication of being infected with the disease, or fever temperature, should receive an injection of pure bile; not less than 10 c.c., and for large animals 20 c.c. This will confer a lasting immunity sufficient for all practical purposes.

"Clean Herds."—When it is decided to inoculate a clean herd, which is in danger of becoming infected through its proximity to diseased cattle, I would recommend that the animals composing the herd should be inoculated with 20 c.c. of glycerinated bile, and to follow this inoculation in from eight to twelve days with an injection of from 10 to 20 c.c. pure bile. This will confer a strong and lasting immunity on the animals in the herd, and will be free from risk arising from the inoculation, or of introducing the disease.

"Pure Bile."—Pure bile should not be used in an infected herd, if any of the other inoculating materials can be obtained, as it tends to intensify the character of the disease in those already infected, and its immunizing effect is too slowly developed to protect the healthy cattle against infection, if they are left in contact with those already sick. If no other means are available, however, the temperature of the whole of the cattle in the infected herd should be taken by the clinical thermometer, and only those which register a normal temperature should be inoculated with pure bile; the others should be separated from the inoculated lot at once and carefully tended. If glycerine can be obtained, the spare bile should be mixed with it in the proper proportion, one part glycerine to two parts of bile. This mixture, after standing forty-eight hours, may be injected into the affected animals in large doses, not only with safety but with marked benefit."

* * *

The following notes are of interest as they are of an extremely practical nature, and are from the note-book of a gentleman who has had a large experience in the present outbreak:

Period of Incubation.—In the case of a susceptible animal inoculated with virulent blood, there will be a rise of tempera-

ture on the fourth day, and the animal is visibly sick on the eighth day. If the animal does not recover, death usually takes place about the eleventh or fourteenth day. It may recover, or die from "debility" weeks after inoculation during convalescence, or it may die from actual rinderpest.

Symptoms.—Depression, rapid emaciation, painful grunt (in pleuro-pneumonia it is rather one of inconvenience), sticky discharge from inner canthus of eye, scalding the side of face; sometimes a bloody discharge from nose. So-called bran-like exudate on buccal mucous membrane (like thin oatmeal porridge), ulceration, commonly between lips and incisor teeth, (ulcerations have a punched-out appearance like pieces taken out by artery forceps). Diarrhoea, like dirty-water, not like diarrhoea from eating green food; mucous casts and slimy mucus, or blood may be present in faeces. Sometimes there is a slight elevation of the tail, as if there was a sore underneath, occasional straining. Elevation of temperature to 105° - 106° .

Autopsy.—Place the carcass on the left side, right side up; make incision through the skin and flesh immediately behind the last rib; the ribs being raised the gall-bladder will become visible. Always secure the bile before proceeding further, if of good color. *Ideal bile* is of bright green color (*not yellow or bloody*); dark brown bile may be used, but do not collect a thick treacly bile. In collecting bile, it is always advisable to collect before opening the stomach, and so avoid getting any blood into the bile. Particular care should be taken not to squeeze the gall-bladder. It should be held in the hollow of the hands and gently pushed upwards to allow of the free flow of bile into collecting utensil. After collecting the bile continue the post-mortem. *If rinderpest lesions are found, save the bile, otherwise discard.*

Post-Mortem.—Open fourth stomach (abomasum) and duodenum : if rinderpest exists there will be irregular ulceration (actual), mucous membrane destroyed or eroded, blackish in color—not elevated, as in swine fever (coagulative necrosis). In acute stages these ulcers are surrounded by an acute inflam-

mation, or the inflammation may be present without ulceration. These appearances are most common in the fourth stomach, but may be seen anywhere in the intestinal tract. Claret-colored striae on roughæ of intestinal mucous membrane may be present in rectum or vaginal mucous membrane. In this last situation it has more the appearance of bruising.

Treatment of Bile after Collection.—If the bile is of an offensive odor ($H_2 S$), discard. If uriniferous odor, it may be used in case of urgency, IF GLYCERINATED.

The odor of good bile (not fresh) resembles fresh raw beef steak.

Let the bile after collection stand in a cool place for 12-24 hours; bile from each animal should be put in *separate* bottles. After standing for 12-24 hours decant all bottles into an enameled iron bucket; discard any bile where the odor is not good. Thoroughly mix all the bile in the bucket with an iron whisk. Measure the bile thus mixed and add one part glycerine to two parts bile, so that the mixture will contain 33 per cent. glycerine. The glycerine and bile to be *thoroughly* mixed, bottle up, seal, and shake frequently. It is best to bury when made, so as to keep cool, but this should not be done for two or three days so as to allow of thorough shaking up. The mixture should not be used until seven days after glycerinization unless very urgent, and in *no case* under 48 hours after making.

Dose.—For immunizing, of the 33 per cent. glycerine-bile mixture use 20 c.c. (6 drams), injected subcutaneously at the elbow or point of elbow. Sometimes a resultant swelling may cause mechanical lameness. Inoculation may be done intravenously (jugular). May be necessary to cast before inoculating.

Dose of Pure Bile.—If the material is available, pure bile (unglycerinated) may be used 10-14 days after first inoculation. *Dose of pure bile should be about 10 c.c. (3 dr.).* This second inoculation intensifies and prolongs the immunity conferred by the first inoculation. The immunity conferred by the first inoculation probably lasts about four months.

In Bile Inoculations, eight or more days elapse before the animal is immunized.

Serum Inoculations take four days before the animal is immunized, but the immunity resulting from serum is not so lasting as that from bile.

In Cape Colony the quarantine period after the last case is *one month*.

THE NEW YORK STATE VETERINARY EXAMINING BOARD has granted the following licenses to practice in the State thus far this year : Samuel Howard Burnett, John Knapp, Burt English, Harry Snyder Beebe, Robert J. Foster, John Bernard Reidy, Jerome Walter Rosenthal, Fred. Dewitt Holford, and Robert A. McAuslin.

FAITHFUL UNTO DEATH.—In a modest flat at No. 138 Livingston Street, Brooklyn, the body of Professor F. H. Daniels, for many years an instructor in music, lay yesterday morning, awaiting funeral services and interment, while at the head of the casket, on a small table, was the body of his favorite dog, Baby, dead of grief at his master's taking off. Baby's father, Maloney, tottered feebly around the rooms, his food untouched since the professor's death. The professor was somewhat eccentric in his habits, preferring the company of his two dogs to the companionship of many of the human kind. They had been his friends for years. Baby, which died with him, was a silk poodle, eighteen years old, the other dog being a year older. For three months the professor had been ill, but until about the middle of March he was able to devote the necessary care and attention to his pets. For a couple of weeks past this care had devolved on other members of his family. Professor Daniels' illness became really serious a week ago, and with his decline came a corresponding change in the dog. When the professor was placed in his coffin on Tuesday Baby crawled under it and died with a whine. He was tenderly lifted to a table beside the coffin, and part of the flowers sent to decorate the casket were strewn around him. The elder dog, too, plainly grieved keenly. He went around the house mournfully, seeking a word from his master or a glance from Baby. Food served to him was left untouched. It is believed he will also die. If it were possible both dogs would be buried beside their master. He was interred in Greenwood yesterday afternoon. Baby will go to a cemetery for his kind to-day.—(*New York Herald, April 3.*)

SOME WOUNDS OF WAR.

BY COLEMAN NOCKOLDS, M. D., V. S., VET. 1ST U. S. CAVALRY,
BATANGAS, P. I.

Gunshot wounds form the majority which the army veterinarian is called upon to dress, both among mounted and transport animals during an active campaign. Out here they are chiefly caused by arms of small calibre, rifles and pistols. Occasionally a horse or mule is injured by a bolo cut or stab, or by spears of either iron or hardened bamboo, or an arrow from one of the various diabolical arrangements manufactured by Tagalogs in the form of man-traps. The most common specimen in this particular vicinity consists of a piece of bamboo about twelve feet in length, bent in the form of an arch and held there by a cord made of roots; it is so set that when the victim trips or pushes against the cord the bamboo is set free, driving an arrow which consists of a flat piece of bamboo one inch and one-half wide and about twelve inches in length, sharpened at one end and hardened by burning with terrific force in the direction of the unfortunate who sprung the trap. Of three infantrymen that were wounded in one day by these arrows, one expired whilst pulling the arrow out; it had pierced the fleshy part of his thigh and severed the femoral, and two were laid up for many weeks in the hospital. In those cases the thigh had been pierced; in one the arrow had also entered the scrotum. Another way in which animals or men are occasionally wounded, is by falling into pits which are lined on their bottoms with sharp pointed stakes and covered above with leaves, grass, etc. Ordinary bows and arrows are common weapons of the Tagalog, as also are blowpipes, long poles with a hole through their centres, through which the natives blow small darts; I have often seen them used, but never had an animal wounded with one. Because of these many treacherous methods of warfare which the natives resort to, sometimes prisoners, but more often ponies, are driven along the trail in front of the troops, and in this way many animals have received wounds caused by these

unique weapons, and in fact many animals are killed outright by these man-traps. It is very hard to distinguish the cord triggers, or the grass covered holes when traveling along a narrow trail in thick brush. It is said that the darts blown from the blowpipes are poisoned. It is quite marvelous the distance an expert blowpipe warrior can send a dart. The only representative of large guns that have come under my observation have been either bamboo cannons, reinforced with bamboo rope, or the old cast iron smooth-bore Spanish cannon, from which sometimes missiles are fired, consisting chiefly of stones, pieces of iron, etc. Of course, the man behind the gun is more in danger from such a weapon acting as a shell or projectile than the enemy at which they are aimed. So shell or shrapnel wounds are out of the question in the Philippines.

Rifle bullets of the cylindro-conoidal type and large calibre, cause most of the wounds which our animals receive. Amongst the almost endless variety of guns which the Filipino insurrectos use may be seen brass-barreled guns firing a round bullet, many varieties of muzzle-loading rifles and smooth-bores, Sniders, Remingtons, Mausers, Colts, Winchesters, Mannlicher's, Martini-Henri's, Lebel's, Schmidt-Rubin, Lee-Metford and Krag-Jorgensen. The majority are obsolete patternus, many of a cheap type, but some first-class modern weapons. The Krags, of course, have either been stolen or captured from American troops; most of the other modern arms were bought during the late insurrection against the Spaniards or captured from them. The most common arm is the Remington single shot, it fires a brass-covered leaden ball of the cylindro-conoidal shape, and large calibre pistols from the old-fashioned muzzle-loading single-barreled horse pistol to the modern Mauser automatic ten-shot pistol. Edged weapons include from the finest Toledo blade sabres, silver inlaid bolos, triangular Spanish bayonet to the sharpened and hardened bamboo spears.

The bullets of the various modern weapons are as follows : Krag-Jorgensen used by the Americen troops. Bullet core of

lead, covered with a shell of cupro-nickel. Length, 1.181 inches; diameter .3228 in.; weight, 237 grains.

Mauser bullet, core of lead, covered with either steel or cupro-nickel; length, 1.212 in.; diameter .311 in.; weight 219 grains (Belgium).

Spanish Mauser bullet, hard lead core, steel, coated with cupro-nickel. Length, 1.196 in.; diameter, .2843 in.; weight, 172.8 gr. Mannlicher, lead core, envelope of lubricated steel. Length, 1.253 in.; diameter, .3228 in.; weight, 244 gr. Lee-Metford, hard lead core, jacket of cupro-nickel; length, 1.25; diameter, .3111; weight, 215 grs. Schmidt-Rubin, hard lead core, steel envelope point; length, 1.13 in.; diameter, .3189; weight, 211.5. Lebel, hard lead cupro-nickel; length, 1.26; diameter, .3228; weight, 216 grs. The muzzle-loading smooth-bore and rifles fire a round lead ball. The Winchester and Colt of large calibre, soft or hard lead conical bullets. Enfield bullet is cylindro-conoidal in shape, of lead, with a boxwood plug, filling a large hollow at its base.

The reason that modern bullets are covered with an envelope of harder material is to prevent leading of the rifles, which would soon render the gun useless if the outside of the ball was of soft metal. The destructive effects of a ball depends upon its velocity more than on its weight. The energy of weight and velocity constitutes its destructive propensities. In its flight through air the bullet has two motions, that of translation and of rotation; it is acted upon by three forces, powder gas, resistance of air and gravity.

The resistance of air gradually diminishes its velocity. The rotation of the bullet is due to the rifles in the barrel; in guns that are not rifled there is also rotation on an axis, the direction of which is determined by that point on the inner surface of the barrel with which it last came in contact. Thus, a cylindro-conoidal bullet projected from a smooth-bore gun is liable to strike the object aimed at as its length; rifling of guns has rendered this impossible by causing a rotary motion on its longer axis. The spin of a bullet is more rapid as the twists

of rifling are shorter and velocity of translation greater ; for that reason the bullet of greatest length has the greatest velocity. The velocity of the motion of translation of a bullet varies with the distance from the firing point, chiefly owing to the resistance of the air ; the velocity of rotation follows the acceleration and retardation of the former and change with it according to the distance.

It therefore follows that the translation and rotation movements cease together when the former ceases by expenditure of energy. But when the motion of translation is suddenly and completely interrupted by contact with an obstacle the motion of rotation continues until its energy is expended. The shape of a bullet has considerable influence on its velocity ; flat heads offer greater to air ; the Ogival has the least.

No class of wounds vary more in general characteristics than those caused by gunshots. The shape and size of the bullet and more especially the velocity at which it was traveling at the time of impact are the chief factors which influence the extent of injury received. The spherical leaden ball of the smooth bore is the largest and has the slowest velocity ; they bruise the skin round the entrance wound, and the soft parts through which they tear are badly lacerated and bruised ; the diameter of the wound of entrance is larger than the diameter of the bullet, and the exit hole is larger than the entrance ; it is also torn and lacerated, the skin is ragged ; if they happen to strike a bone they break it into a large number of pieces, many of the fragments are driven forwards and fissures extend in both directions from the seat of fracture. When the velocity of a round ball is low it may simply flatten against the bone. The spherical ball is also more liable to lodge in a bone than either the large or small bore cylindro-conoidal bullet. The cylindro-conoidal has greater penetrative powers. A higher velocity and a sharp-pointed head rotation does not aid in the penetration of a bullet. This is clear when one considers the fact that an average modern bullet only completes one turn on its long axis in seventy-eight inches of its onward course. Cylindro-conoidal bullets

produce wounds the tracks of which are more clearly cut than by the round bullet ; there is a slight ring of contusion at the point of entrance, which is smaller than the missile causing it, and the exit but little larger. If these bullets strike a bone while traveling at a high rate of velocity it shatters it into more numerous fragments than does the round ball. The actual site of fracture is completely cleared of splinters, some of which may be carried out with the bullet, others driven forward in different directions. In this case the exit of the wound may be very large and lacerated, due to pieces of bone being driven through the skin. At lower rates of velocity, that is, at longer range, the bullet does not break the bone into as many fragments ; they are also larger and less numerous and displaced, but the wound of exit is always larger when a bone has been fractured ; this is diagnostic.

The modern small-bore rifle. By small bore is understood a rifle of .350 inch calibre or less. The Krag-Jorgensen is .315 in. Of other modern small bores the Lee-Metford .303, Mauser .301, Lebel .315, Mannlicher .315 and Schmidt-Rubin .295 inches. The Spanish Mauser 4 inch calibre. There is a great difference of opinion as to wounds caused by the modern rifle missive. Some authorities contend that they are so trivial as hardly to come up to the purpose for warfare, that their stopping effects are not sufficient ; that is very true as regards our animals or savages ; as unless at very short range or hit in a vital spot they invariably keep going. I have seen a number of horses with more than five bullet holes in them, some through the chest, others through the abdomen, or both, and still attend to their work as if only slightly wounded. On a march recently with orders to kill everything that could not be caught it became a common saying amongst the soldiers when shooting at animals at long range : It is no use wounding them ; we can shoot through them, but it does not kill. On one occasion a squad had been firing at a bunch of caribou numbering seventy-five ; quite a number were apparently unharmed, but did not seem to want to run away when approached, but would attack our

horses ; some of these animals were literally covered with bullet holes, which in most cases had completely pierced them. One often sees ponies grazing mournfully around with old scars on portions of their bodies, which showed without much room for doubt that the bullets went right through them. It is contended that wounds inflicted by the modern small-bore are so trivial in nature and heal so quickly that the desired object is not attained against the enemy ; that instead of putting a man *hors de combat* for such length of time as will prevent his taking any further part in the campaign, the projectile wounds a man so slightly that after a few days or weeks he returns to his place in the ranks as capable of fighting as ever. This same argument holds good in cases of horses and transport animals. The opinion held by others is that the injuries caused by the projectile of the modern small-bore are so terrible in extent and so fatal in effects that in their opinion the weapons from which they are discharged contravene the spirit entered into by nearly all civilized powers in Russia in 1886.

It is certainly appalling what a deadly weapon the modern gun is if in the hands of good shots, especially at close range ; at the same time many wounds inflicted by them heal and heal quickly, whilst wounds in the same region and of a similar character caused by a large bore rifle would prove rapidly fatal.

At short range, because of the great velocity of the modern rifle bullet, it smashes everything with which it comes in contact, but at long range it bores holes, perforating bones without fissuring them, leaving smooth and small tracks, and secondary haemorrhage is not as frequent as with the large bore. They are not so apt to lodge in tissues because of the greater penetrative power with which they are endowed. The entrance wound is always smaller than the exit ; they are of circular shape as if punched out, but if the skin is loose, the ring may have a jagged edge ; even when the ball strikes obliquely the wound is oval, but the entrance wounds from a ricochet is always lacerated, due to deformation of the envelope of the missile. The size and shape of the wound depends upon the velocity and angle of the inci-

dence of the bullet at the instant of impact with the skin, but the edge of the wounds of exit depends upon, in addition to these, the quality and extent of tissues through which it passes, but there is never as much variation in the shape of exit as of entrance wounds.

In the majority of cases the hole of exit is star shaped and lacerated, but may be oval ; a bullet which even grazes a bone without causing fracture, is turned slightly from its course and comes out sideways, thus making a star-shaped, triangular or three or four-sided wound ; when it passes through a long hard bone the wound of exit may be a laceration several inches long, with torn edges and shreds of muscle and tendons protruding, and particles of bony débris adhering to its mangled sides ; exit wounds of this kind are only produced at ranges up to 600 yards and are always a sign of perforation of the diaphyses of long bones.

At all ranges and whether the bone has been hit or not, the exit hole is usually larger than the entrance. The relative positions of the entrance and exit holes are almost always correct indications of the tract of the bullet, but sometimes when the bullet is turned aside by grazing a long compact bone, this statement does not hold good ; but that is exceptional. The channel cut by the small-bore bullet is in the form of a cylindrical tube, the diameter of which at short range is somewhat larger than that of the bullet ; at long range it is smaller, but is always larger towards the exit wound. Sudden enlargement occur where the bullet passes through bone or tendon ; its sides are smooth and their vicinity engorged with blood, more or less depending upon the extent of the haemorrhage which has occurred ; perforations of fascia are circular punched-out holes of the size of the bullet. Tendons are split in the length of their fibres, except the bullet strike sideways or is deformed when they are lacerated ; pieces of saddle blankets, saddles, hairs, clothing, leather, etc., may be carried into the wound. Blood vessels are more often wounded by pieces of bone, but if the new bullet hits them, they will be clean cut ; at long range, epiphy-

ses and spongy bones are pierced with little or no splitting; at short range they are splintered. Hard bones are intensely splintered at short range and gradually less so as the range is longer. The skull is shattered at short range; at long range the holes of exit and entrance are clean bored with no splintering.

So-called explosive injuries that have been and are so often discussed, and during the late Boer war each side accused the other of using "dum dum" bullets, were in the majority of cases caused by the ordinary small-bore bullet at short range. Admitting that there may have been some individuals who used soft-nosed bullets, easily made by filing the point of the hard coated bullet until the lead is exposed, the fact still remains that the true cause of most of the severe injuries received in modern battles from small arms is due to the high rate of velocity of the missive, the soft parts at the moment of impact receiving a large amount of the energy of the bullet, move forward and outward in lines radiating from the long axis of the bullet tract with such a degree of force that they act as secondary missives on the neighboring tissues and cause still further pulping and smashing of the tissues. Even the fluid particles participate in the secondary action, which is all the more marked when fragments of bone are driven apart in this manner. Bullets traveling at high rates of velocity produce crushing and attrition of the tissues both directly and indirectly: directly, by the immediate action of the bullet itself, and indirectly by the communication of a part of its energy to the solid and liquid particles which it displaces. Most frequently explosive effects are only markedly apparent when a bone has been struck, lacerations being due to fragments and splinters.

The effect produced when a bullet that has had its point filed off so as to expose the leaden core strikes, is to tear open the envelope, which turns back its edges in the form of jagged flaps of metal; the leaden core breaks up into slug-like particles, which are scattered through the tissues in all directions, producing a wound of the utmost severity.

(*To be continued.*)

PATENT STOCK FOODS AND CONDITION POWDERS.*

BY TAIT BUTLER, VETERINARIAN TO NORTH CAROLINA STATE BOARD
OF AGRICULTURE.

The so-called "condition" powders, with which all stock-men are more or less familiar, seem to have occupied about the same place in the treatment of live stock as the old familiar and much-detested "bitters" which the mothers of thirty years ago thought necessary each spring for the general health of the family. In those good old days of our fathers the administration of these nostrums were generally preceded by taking from each horse and each member of the family a considerable quantity of blood. The practice was thought to cure the sick and prevent the well from becoming sick. While it is true that the bitter tonics repaired some of the injury done by the bleeding, still, with the advance of intelligence among the masses, the fallacy of the practice became apparent; but the old idea was too deeply implanted in the common mind to be crushed by the disapproval of medical science, and it arose again in a new garb as patent medicines and patent stock foods. The love of mystery, if not of humbug, so characteristic of the human mind, and the opportunities for secrecy and deception in the compounding of medicines, gave these new inventions a great field of operation.

The large amount of money expended by the farmers of North Carolina for these patent condimental stock foods or condition powders, justifies the fullest publicity of information concerning their composition and merits. The claims made for them by their manufacturers are briefly stated as follows:

1. That they will prevent disease.
2. That they will cure a great variety of diseases.
3. That they are composed of certain rare and mysterious ingredients in such proportions as will cause a normal or

* Reprinted from the Bulletin of the North Carolina State Board of Agriculture for May, 1902.

healthy animal to digest more food and make better use of a given quantity.

4. That they are of themselves foods of great and unusual value.

The first requisite to a specific and intelligent discussion of these claims is a knowledge of the composition of the mixtures. Fortunately, a chemical analysis readily shows their food value, that is, the amounts of the different food elements which they contain; while a microscopic examination of them reveals the kinds of materials of which they are composed.

The Experiment Stations have furnished this information in such a way as to preclude any probability of error. Massachusetts, Connecticut and North Carolina published bulletins on this subject so nearly at the same time as to make it certain that the work was done independently and without any knowledge of each other's results, and the close agreement of their findings gives additional assurance of their accuracy.

During the past year or two, International Stock Food has been extensively advertised and considerable of it sold in this State, while Pratt's Animal Regulator has also had a large and general sale. For this reason we have selected these two, and will give their composition as published in the bulletins above referred to.

According to the Connecticut Experiment Station, Bulletin No. 132, International Stock Food contains wheat feed, cayenne, salt, charcoal, and some bitter drug; Massachusetts, Bulletin No. 71, says it contains wheat offal, pepper, salt, charcoal, and some material rich in protein, and the December, 1900, Bulletin of the North Carolina Department of Agriculture says it consists of wheat bran, red pepper, charcoal and linseed meal. It will be noticed that all agree that wheat in some form is the principal ingredient. Pepper and charcoal are also found by all three, while salt and a material rich in protein—linseed meal by North Carolina—are found by two, and a bitter drug by one. This is indeed a remarkable unanimity of results when it is remembered that these "foods" are not by any means constant

in their composition, it apparently being the custom of the manufacturers to fill up with any odd material that happens to be cheap and convenient.

Pratt's Animal Regulator, according to the Connecticut bulletin, contains corn meal, salt, charcoal, fenugreek and a bitter drug, while the Massachusetts bulletin says it contains corn meal, salt, fenugreek and a bitter drug. In both cases the bitter drug is thought to be gentian. The agreement is complete, hence almost certain to be accurate in all respects, except at the time the Massachusetts sample was made the manufacturer seems to have been out of charcoal, or perhaps it was just at that time so expensive that he could not afford to sell at \$500 per ton.

The following tables show that the chemical analyses, also agree as to the amounts of the different "food elements" contained in these mixtures :

INTERNATIONAL STOCK FOOD.

Authority.	Protein.	Fat.	Nitrogen-Free Extract.	Crude Fibre.	Ash.
	Per Ct.	Per Ct.	Per Ct.	Per Ct.	Per Ct.
Massachusetts . . .	16.97	9.35	48.22	8.63	7.74
Connecticut	14.31	4.67	47.88	14.51	12.50
North Carolina . . .	15.06	3.87	12.15

PRATT'S ANIMAL REGULATOR.

Authority.	Protein.	Fat.	Nitrogen-Free Extract.	Crude Fibre.	Ash.
	Per Ct.	Per Ct.	Per Ct.	Per Ct.	Per Ct.
Massachusetts . . .	10.13	4.56	61.86	3.33	11.01
Connecticut	9.69	4.37	63.75	3.12	12.40
North Carolina . . .	9.75	4.53	3.13

By keeping these analyses before us, we are now in a position to briefly consider the specific claims made by the manufacturers and judge of their accuracy. In calculating the value

of either a medicine or a food, we must consider the cost and the results to be obtained from its use. The cost of International Stock Food is from \$280 to \$500 per ton, while that of Pratt's Animal Regulator is about the same.

Following the order in which we enumerated the claims made by the manufacturers, we may pertinently ask, Are wheat bran, charcoal, salt, and pepper worth \$500 a ton for the prevention of disease? It is scarcely necessary to say that these materials have no value above that recognized by all feeders, and are worth in combination or otherwise not more than ten per cent. of what they cost when bought as International Stock Food.

The second claim made for these materials, namely, that they will cure a great number of diverse diseases, is equally false and ridiculous. It is a plain fact, approved by modern medical science, that a well animal does not need medicines, but is really injured by them if they are sufficiently active or strong to produce any appreciable effect. It is equally true that a sick animal should receive treatment for the special disease from which it is suffering. It is, therefore, apparent to any person that the claims made for these stock foods, or condition powders, that they will cure hog cholera, distemper, abortion and scours, make cows give more milk and hens lay, are impossible even if he did not know the ingredients which they contain to be possessed of little or no medicinal or curative value. If any reader doubts this statement, let him ask his family physician, in whom he has confidence, if pepper, salt, charcoal, fenugreek and gentian in extremely small quantities have any decided medicinal properties. Moreover, if these ingredients would in any quantity or proportion effect the marvellous cures claimed for them, the small amount contained in the prescribed doses of these stock foods would produce absolutely no effect. We have quite reliable information of a horse having eaten 12½ pounds of International Stock Food without any ill effects. It is evident that if that amount produced no appreciable effect, two or three tablespoonfuls would not effect the marvellous cures proclaimed in the advertisements.

The third claim enumerated is the one which seems to appeal more forcibly to the average farmer. No person acquainted with the subject is likely to be caught by this claim, but the average stock owner will only be convinced by an actual feeding test. Such a test is absolutely worthless unless the animals selected are as nearly alike as it is possible to get them, and are kept under the same conditions. The food given, as well as the animals or their product, must all be weighed. Any trial made with less rigid or accurate conditions is worthless, but one such is of greater value than a hundred where neither the food nor the animals are weighed. Fortunately, many accurate tests have been made, and the results have been uniformly at variance with the claims of the manufacturers. One such test may be quoted from a bulletin of the Kansas Experiment Station, by D. H. Otis:

EXPERIENCE WITH ACME FOOD.

"On November 1, 1900, sixteen cows from the herd of the Kansas Agricultural College were divided into two lots as nearly equal as possible, on the basis of the yields of milk and butter fat for the month of October. One lot (cows fed Acme food) had the advantage by 212 pounds of milk and 17.4 pounds of butter fat for the month. Both lots were fed on alfalfa hay, with a grain ration of equal parts of corn chop and bran. In addition to this feed, one lot received Acme Stock Food fed according to directions. On December 1, oats took the place of bran in the grain ration of both lots. The results for the three months (92 days) under experiment are as follows:

<i>Eight Cows Receiving Acme Food.</i>	<i>Eight Cows Without Acme Food.</i>
Milk produced, pounds. .14,271	Milk produced, pounds . 14,395
Test, per cent. 4.39	Test, per cent. 4.13
Butter fat produced, lbs. 626.7	Butter fat produced, lbs. 595.9
Cost per pound of fat, cts. 14.6	Cost per pound of fat, cts. 12.3

"The Acme Food lot consumed 136 pounds of Acme Food, which, at 11 cents (wholesale price) amounts to \$14.96. Deduct this from the feed cost and the expense for feed in producing a pound of butter fat is reduced to 11.68 cents. The difference in the total production of butter fat can readily be ac-

counted for by the difference in the lots at the commencement of the experiment, but granting that it is due to the effects of the Acme Food, it would make the extra butter fat cost 48 cents per pound.

EXPERIENCE WITH GLOBE STOCK FOOD.

"Taking the record for the month of January as the basis, a herd of twenty cows was divided into two lots as nearly equal as possible, there being only a difference of 1.4 pounds of butter fat in the total yield for the month. All the cows received alfalfa hay for roughness and equal quantities of corn- and cob-meal and oats for the grain ration. One lot received the Globe Stock Food in addition. The results for two months (59 days) are as follows :

Ten Cows with Globe Food.

Milk produced, pounds .	12,784
Test, per cent.	4.05
Butter fat produced, lbs .	518.1
Cost per lb. of fat, cents .	11.7

Ten Cows without Globe Food.

Milk produced, pounds .	12,896
Test, per cent	3.96
Butter fat produced lbs .	511.3
Cost per lb. of fat, cents .	11

"If the Globe Food be eliminated from this experiment, the cost of producing a pound of butter fat is the same in both lots. The totals for two months show that the cows receiving the Globe Food produced 6.8 pounds the most butter fat. Globe Food sells for 9 cents per pound (wholesale rates). The ten cows consumed 43.3 pounds, worth \$3.89, or a cost of 57 cents for each extra pound of butter fat produced."

The value of any given food material is best estimated and appreciated by comparing its price with others containing about the same amounts of the different "food elements."

Since the microscope showed us that the principal ingredient of International Stock Food is wheat offal, or wheat bran, we would expect the chemical analysis to correspond very closely with that of wheat bran, and such is the case. Its slightly inferior feeding value and other unimportant variations from ordinary wheat bran are the result of the charcoal, salt, pepper and other useless and inferior substances with which the wheat bran was adulterated.

Wheat bran may be purchased for from \$20 to \$25 a ton in

North Carolina, while the other ingredients are even cheaper, yet tons upon tons of this stuff mixed up, called International Stock Food and thoroughly advertised, are being sold at from fifteen to twenty times that amount.

The same facts apply to Pratt's Animal Regulator. The microscope told us that it was composed almost exclusively of corn meal, and the chemical analysis is consequently similar to that of corn. The more extensively advertised article sells at from \$400 to \$500 a ton, while corn meal may be bought for less than one-tenth that price, even with corn at a dollar a bushel.

In conclusion it may be freely stated that the so-called stock foods and condition powders on the market, when tested by accurate and practical feeding trials, when judged as medicines, when compared in price with other materials of the same feeding value, or when measured by the claims made for them by the manufacturers, are frauds pure and simple. If the live stock is well and properly cared for and fed, it needs no medicine. If care and feed are needed, the best may be had on any market for less than one-tenth that charged for them when put up in one or two pound packages and advertised as "stock food" or "condition powder."

The question often arises, why is it if these stock foods are all frauds that so many honest and intelligent men think they have obtained good results from their use? The answer is not difficult. There is in every organism an inherent tendency to return to normal conditions, or, in other words, to get well if sick.

A man, when he gets to the point of buying "condition powders" for his horse, is ready to give him the better care and food which alone would and does bring about the desired improvement in condition. The "stock food" gets the credit, although it does contain nothing but wheat bran, charcoal and pepper and salt. If it is a tonic that the horse, cow or pig is in need of, why not purchase gentian, iron and nux vomica direct from the druggist at half cost? They will not only cost less, but if medicine is really needed, are much more likely to produce the desired effect.

OBSERVATIONS ON BACILLUS COLI COMMUNIS FROM CERTAIN SPECIES OF DOMESTICATED ANIMALS.*

BY VERANUS A. MOORE, M. D., AND FLOYD R. WRIGHT, A. B., OF ITHACA, N. Y.

Read at the meeting of American Bacteriologists, Chicago, January 1, 1902.

There are few species of bacteria, other than the highly pathogenic forms, which have received more attention, and concerning which there seems to be more uncertainty, than *Bacillus coli communis*. It is generally recognized that the normal habitat of this species is in the intestinal tract of man, and certain, if not all, of the domesticated and, probably, wild animals. It is understood further that soil, or water polluted with the excreta of man or these animals may and usually does contain this bacillus in greater or less numbers for a certain length of time after said pollution. It does not seem to be assured, however, that it will multiply and continue to exist as in a new habitat in these extraneous environments excepting possibly in rare instances under peculiarly favorable conditions respecting food, moisture, and temperature. Numerous investigations have revealed the existence of marked variations in this species and already there has come into recognition several groups of varieties with many intermediate and transitional forms. So conspicuous have these varieties become that an inquiry is already being made into their possible significance from a sanitary point of view. Bacteriologists, however, are intensely interested in the conditions which give rise to so many varieties.

A search for the source of the varieties and groups of varieties which have been described shows that, with few exceptions, they have been isolated from polluted soil, water, or lesions of various kinds in man or in animals. The existing knowledge concerning the types and varieties of this species, as it exists in its normal habitat in the digestive tract of different animals, is so exceedingly meager that further investigations to determine, if possible, the extent of its variations in different individuals

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and even in the same individual, and in different species, seems to be promising of good results. The perplexing questions that are constantly arising respecting certain forms of the colon bacillus often found in water supplies and morbid tissues suggested the desirability of determining the relation between these bacilli and those existing normally in the digestive tract of different animals. To this end we undertook the present investigation of the colon group in its natural haunts. The amount of labor involved in following out the different lines suggested in such an inquiry, together with the difficulties involved in obtaining the intestines in the same condition, was so enormous that no attempt is made to correlate our findings either with the stage of digestion, or the character of the food taken previously. We are unable to offer any information concerning the relative numbers of this organism in the different parts of the same intestine, information which our work has suggested would be very desirable and worthy of an independent investigation.

In order to bring our preliminary findings* to the attention of those interested in this work, it seems best to report simply the results obtained, omitting all discussion of the literature.

The general plan of work and methods which we followed are, stated briefly, as follow :

1. To make a series of gelatin plate cultures from each of the large (cecum or colon) and small (ileum) intestines of freshly-killed animals. For this a platinum loop full of mucus from the mucosa was taken for the first plate in each case. A tube of bouillon was also inoculated from each.
2. To make subcultures in bouillon from six well-isolated, characteristic, spreading colonies believed to be those of *B. coli communis*, which appeared on the plates.
3. To replate these bouillon cultures to make sure of no contamination.

* In November, 1900, our laboratory was burned and we lost the cultures of the colon bacillus from 42 animals. These were partially studied, but not sufficiently to include in this list. It can be stated, however, that so far as observed there were no marked exceptions to the results here recorded.

4. To make from the colonies which developed on the second series of plates, subcultures (1) in agar for stock cultures, (2) directly from the same colonies in different media used in this study.
5. To determine the pathogenesis by inoculating such experimental animals as the guineapig and rabbit. (This was found to be impossible for every culture owing to the scarcity of animals.)

After this general scheme examinations were made and the results here reported from 44 animals divided among six species. The cultures made from the different colonies of this bacillus from the intestine of the same animal were practically identical in all of their manifestations. For this reason, but one culture from each individual is included in the appended table.

1. *Horses*.—The horses from which the examinations were made were those killed for dissection in the department of anatomy of the New York State Veterinary College. They were old, but in a state of good health, with the exception of lameness, which in a few cases was very bad. In all, examinations were made from nine horses. In some animals the number of colonies of *B. coli communis* which developed on the plates made from the mucosa of the large and small intestines were practically the same. In these cases they comprised nearly all of the colonies. In others the number of colonies of *B. coli communis* from the cecum and ileum varied, and colonies of other bacteria predominated in numbers. The colon bacilli obtained from the different animals were morphologically alike, all motile, some moderately and others actively so. The cultures in bouillon and on agar, gelatin and potato, did not exhibit characters unusual for this species*. Their effect upon the sugars, on milk, and the production of indol is indicated in the appended table.

2. *Cattle*.—Eleven examinations were made from the bovine intestines. No. 1 died suddenly, supposedly from poison. The

* The general characters which are referred to as differentiating the colon bacillus are those given by Dr. Theobald Smith (*The American Journal of the Medical Sciences*, September, 1895.)

colon was decidedly haemorrhagic. Nos. 2 and 3 were killed because of tuberculosis. Nos. 4, 5 and 6 were killed for beef at the slaughter-house. The remaining five were slaughtered veals, four to six weeks old. We also examined the intestines of a calf of full term but born dead. All of the media inocu-

ACTION OF BACILLUS COLI COMMUNIS FROM THE INTESTINES OF HORSES ON THE SUGARS AND MILK.

Horse No.	Indol.	Dextrose.			Lactose.			Saccharose.			Milk. Coagu- lated in
		Quan- tity of Gas.	H CO ₂	Reac- tion.	Quan- tity of Gas.	H CO ₂	Reac- tion.	Quan- tity of Gas.	H CO ₂	Reac- tion.	
1	+	1	3.5	Acid.	1	3.6	Acid.	0	—	Alk.	8 days.
		3	2.7		6	2.1		—	—		
2	+	6	3.5	"	5	3.3	"	7	1	Acid.	2 days.
		13	2.5		13	1.7		13	1		
3	+	6	1	"	bub- ble.	—	"	0	—	Alk.	Acid no coag.
		13	2		—	—		—	—		
4	+	1	4.5	"	6	2	"	0	—	"	7 days.
		2	2.5		13	1		—	—		
5	—	1	1.4	"	1	3.3	"	0	—	"	2 days.
		3	1		2	2		—	—		
6	+	5.5	3	"	1	4.1	"	4	1	Acid.	5 days.
		13	2		2	2.6		13	1		
7	+	1.1	3	"	1	2	"	7.5	4.7	"	2 days.
		2.5	2		2	1.1		13	2.8		
8	+	6	3.7	"	5.4	3.4	"	7.5	4.6	"	4 days.
		13	2.3		12.5	2		13	2.9		
9	+	1	—	..	5	3	"	0	—	Alk.	No change noticed.
		2	—		13	1		—	—		

In Nos. 6, 7, 8 the time required for the completion of the gas production in saccharose was 23, 17, 15 days respectively.

lated from this animal remained sterile (not included in table). The number of colonies obtained from the different animals

ACTION OF *BACILLUS COLI COMMUNIS* FROM THE INTESTINES OF CATTLE ON THE SUGARS AND MILK.

Cow. No.	Indol.	Dextrose.				Lactose.				Saccharose.				Milk.
		Quan- tity of Gas.	H CO ₂	Reac- tion.		Quan- tity of Gas.	H CO ₂	Reac- tion.		Quan- tity of Gas.	H CO ₂	Reac- tion.		
I	+	I	3.5	Acid.		7	2	Acid.		7	4	Acid.		3 days.
		2	3			13	1			13	3			
2	+	7.5	2	"		5	3	"		5.3	3.3	"		7 days.
		13	1			13	1			13	2			
3	+	I	2	"		5.5	4	"		0	—	Alk.		3 days.
		2	1			13	1.5							
4	+	5.5	3.5	"		5.5	3.5	"		5.5	3.2	Acid.		7 days.
		13	2			13	2			13	2.3			
5	++	5	3	"		5	3	"		0	—	Alk.		3 days.
		12	2			12.5	2							
6	+	5	3	"		1	3	"		0	—	"		2 days.
		12.5	2			2	2							
7	++	I	3.9	"		6	3.6	"		0	—	"		8 days.
		2	2.5			13	2.4							
8	+	I	3.3	"		6	3.8	"		0	—	"		7 days.
		2	2.5			13	2.2							
9	+	I	3.8	"		5.3	3	"		8	4.8	Acid.		5 days.
		2	2.4			13	2.3			13	3.2			
10	+	I	3.7	"		1	4	"		0	—	Alk.		8 days.
		2	2.5			2	2.5							
11	+	6	3.5	"		7	2	"		1	2.7	Acid.		8 days.
		12.5	2.5			13	1			3	1.8			

varied greatly; in the majority of cases there were more colonies of *B. coli communis* on the plates made from the large intestines. The bacilli in the cultures from the different animals showed a moderate degree of motility. The growths in the bouillon, on agar, gelatin and potato were in no way different from those generally considered to be characteristic of *B. coli communis*. The effect on the sugars and on milk are given in the appended table.

3. *Sheep*.—Intestines from eight sheep were obtained. No.

ACTION OF BACILLUS COLI COMMUNIS FROM THE INTESTINES OF SHEEP ON THE SUGARS AND MILK.

Sheep No.	Indol.	Dextrose.			Lactose.			Saccharose.			Milk. Coagulated in
		Quan- tity of Gas.	H CO ₂	Reac- tion.	Quan- tity of Gas.	H CO ₂	Reac- tion.	Quan- tity of Gas.	H CO ₂	Reac- tion.	
1	+	7.5	4	Acid.	1	4	Acid.	0	—	Alk.	2 days.
		—	—		2	2.5					
2	+	5.7	3.2	“	5.5	3.5	“	0	—	“	4 days.
		—	—		—	—					
3	+	13	2.5	“	13	2	“	1	—	“	4 days.
		—	—		—	—					
4	+	1	2.7	“	1	4.1	“	—	—	Acid.	4 days.
		3	2		2	2.4					
5	+	4.8	2.8	“	5.3	3.4	“	6.5	—	“	4 days.
		—	—		—	—					
6	+	12.5	2	“	12.5	1.9	“	12.5	3	“	4 days.
		—	—		—	—					
7	—	5.8	3.3	“	1	4	“	5.5	—	“	2 days.
		—	—		—	—					
8	—	12.5	2.5	“	2	2.3	“	12.5	1.9	“	2 days.
		—	—		—	—					
6	+	1	4	“	7.5	4.7	“	5	—	“	2 days.
		—	—		—	—					
7	—	2	2.6	“	12.5	2.8	“	12	1.9	“	{ Acid slight ppt.
		—	—		—	—					
8	—	1	3.7	“	6	3.8	“	0	—	Alk.	{ Acid slight ppt.
		—	—		—	—					
7	—	2	2.3	“	13	2.2	“	0	—	“	{ Acid slight ppt.
		—	—		—	—					
8	—	6.7	4.1	“	5.8	4.1	“	0	—	“	{ Acid slight ppt.
		—	—		—	—					
8	—	12	2.6	“	12.5	1.7	“	—	—	“	{ Acid slight ppt.
		—	—		—	—					

I died of some unknown disease. Autopsy was held a few hours after death. The intestines were apparently normal, except a few nodules caused by *Cesophagostoma Columbianum*, Curtice. All of the others were from nearly or quite full-grown lambs, that were killed for food. Most of the gelatin plates developed many colonies of liquefying bacteria and fungi which interfered with even an approximate estimate of the number of colonies of *B. coli communis*. The colon bacillus was isolated in a number of cases by plating bouillon cultures which were made directly from the mucosa at the time that the original plates were made. In every case the colon bacilli were motile, but the degree of

ACTION OF BACILLUS COLI COMMUNIS FROM THE INTESTINES OF PIGS ON THE SUGARS AND MILK.

Pig No.	Indol.	Dextrose.			Lactose.			Saccharose.			Milk. *Coagu- lated in
		Quan- tity of Gas.	H CO ₂	Reac- tion.	Quan- tity of Gas.	H CO ₂	Reac- tion.	Quan- tity of Gas.	H CO ₂	Reac- tion.	
1	++	6.3	3.8	Acid.	4.8	3.3	Acid.	1	2	Acid.	Coagu- lated
		—	—		—	—		—	—		
2	—	12	2.5	“	12.5	1.5	“	3	1	Alk.	No change.
		1	1.8		5.5	3.7		0	—		
3	++	—	—	“	—	—	“	1	1.6	Acid.	Coagu- lated.
		5	3.2		5.2	3.4		—	—		
4	+ +	—	—	“	—	—	“	5	.9	“	Coagu- lated.
		12.5	1.8		12	1.8		—	—		
5	+	4.5	2.7	“	1	4.2	“	6.7	4	“	Coagu- lated.
		—	—		—	—		—	—		
6	++	12.5	1.8	“	2	2.3	“	12.5	2.7	“	Coagu- lated in 4 days.
		1	2		1	4.2		—	—		
7	+	—	—	“	2	2.5	“	0	—	Alk.	No change.
		2	1		2	2.5		—	—		
6	++	1.5	2.2	“	3	2	“	1	4.5	Acid.	Coagu- lated in 4 days.
		—	—		—	—		—	—		
7	+	2.5	2	“	8	1	“	3	2.5	“	Coagu- lated in 3 days.
		1	2.7		5.5	2.5		2	2		
7	+	—	—	“	—	—	“	5	1	“	Coagu- lated in 3 days.
		2	1.5		12	1.5		—	—		

* Notes concerning the time required to produce the changes in the milk in the first five cases were inadvertently omitted.

activity differed slightly, except in No. 8, which was very active, exhibiting a darting motion. The growths in bouillon, on agar, gelatin, and potato, were characteristic of *B. coli communis*. The effect on the different sugars and on milk, together with the indol reaction, are appended.

4. *Pigs*.—In this series we used the intestines from full-grown pigs that were killed for food. The gelatin plates were remarkable for the great number of colonies of *B. coli communis* present, and the small number of colonies of other bacteria. In the hanging drop the colon bacilli isolated from each case were sluggish in their movement. There was nothing unusual noted respecting their growth in the bouillon, agar, gelatin, and potato cultures. The effect of growth in bouillon containing sugars and in milk, together with the indol reaction are given in tabulated form.

5. *Dogs*.—Six dogs were examined. No. 1 had distemper,

ACTION OF BACILLUS COLI COMMUNIS FROM THE INTESTINES OF DOGS ON THE SUGARS AND MILK.

Dog No.	Indol.	Dextrose.			Lactose.			Saccharose.			Milk.
		Quan- tity of Gas.	H CO ₂	Reac- tion.	Quan- tity of Gas.	H CO ₂	Reac- tion.	Quan- tity of Gas.	H CO ₂	Reac- tion.	
1	+	9	5	Acid.	8.5	6	Acid.	2.7	1.9	Acid.	3 days.
		13	4		13	2.5		13	0.8		
2	+	7	2	"	5	3.3	"	0	—	Alk.	3 days.
		13	1		13	1.7					
3	+	7	4.3	"	6.4	3.9	"	0	—	"	4 days.
		13	2.7		13	2.5					
4	+	5	3.4	"	1	2	"	1	1.1	Acid.	3 days.
		12	2.3		2	1		12	4		
5		Colonies of <i>Bacillus coli communis</i> were not found.									
6	+	1 2	2 1	Acid.	1 2	2 1	Acid.	1 10	5 2	Acid.	3 days.

and the intestines were congested; the other five were healthy dogs that were killed for the purpose of obtaining blood-serum for culture media. In one case (dog killed for serum) no colonies of *B. coli communis* developed. In the other cases more *B. coli* were found in the large intestine than in the small. There were many colonies of liquefying organisms. The colon bacilli showed the characteristic morphology, and were all motile with no marked difference in degree. Cultures in bouillon, on agar, gelatin, and potato, showed no unusual characteristics, and all produced approximately the same amount of indol. The effect of the different cultures on sugar and milk follow.

6. *Chickens*.—The chickens, three in number, were about three-quarters grown, and were killed for food. *B. coli communis* was present in large numbers. They were only moderately active. The growths in bouillon, on agar, gelatin, and potato, showed no unusual characteristics. There was no appreciable difference in the amount of indol produced. The results of partial examinations of the colon bacilli from seven other chickens gave, so far as made, similar results, except certain of them which permeated saccharose with the formation of gas. The action of the bacilli from the three fowls, on sugars and milk are appended.

A study of the action of the colon bacilli on the sugars and milk shows that those existing in the intestines of these different species of animals fall very naturally into two groups, viz., those that ferment the three sugars with the formation of gas and those that ferment dextrose and lactose only. These correspond with the two varieties described by Smith. It is important to note that the quantity of gas produced and the relative quantities of H and CO₂ varied somewhat in the different cultures. It is difficult, however, to find variations sufficient either in extent or constancy to warrant the formation of new varieties or groups.

Examinations have been made of the intestines of a number of frogs with negative results so far as the colon bacillus is concerned. A number of rabbits have also been examined, with

the result that *B. coli communis* appears in the intestine of about one rabbit in four. All of the cultures studied from the rabbits fermented the three sugars with the formation of gas. They all produced indol and coagulated milk.

ACTION OF BACILLUS COLI COMMUNIS FROM THE INTESTINES OF CHICKENS ON THE SUGARS AND MILK.

Chicken	Dextrose.			Lactose.			Saccharose.			Milk.		
	No.	Quan- tity of Gas.	H CO ₂	Reac- tion.	Quan- tity of Gas.	H CO ₂	Reac- tion.	Quan- tity of Gas.	H CO ₂	Reac- tion.	Coagu- lated in	
1	3	2.5	—	Acid.	3.3	2	—	Acid.	o	—	Acid.	2 days.
	13	0.5	—		13	1.3	—					
2	7	2	—	"	7	4.7	—	"	o	—	Alk.	3 days.
	13	1	—		13	2.3	—					
3	4.5	3.5	—	"	5	3.8	—	"	o	—	Acid.	3 days.
	13	1	—		13	1.2	—					

The variation in the pathogenesis of the cultures from the different species of animals was very marked in so far as they were tested. Guineapigs inoculated in the abdominal cavity with 0.5 cc. of a fresh bouillon culture died in from 24 to 36 hours when inoculated with the cultures from dogs, but with very few exceptions they did not die after the inoculation with cultures from the other animals. The further fact was observed that when guineapigs were inoculated with cultures of one, two, three, four and five days' growth respectively, those inoculated with the four and five day cultures remained well while the others died. Additional results will be necessary before conclusions can be drawn from these preliminary observations.

MANY New York State veterinarians complain that the laws are not enforced against non-qualified practitioners. This subject will be brought before the meeting in Brooklyn on the 9th and 10th inst. Every practitioner in the State should feel it his duty to be present and assist in the efforts then to be made.

VALEDICTORY ADDRESS,

DELIVERED BY J. H. HANNA, CHICAGO VETERINARY COLLEGE, AT THE
COMMENCEMENT EXERCISES, FRIDAY, MCH. 28, 1902.

Mr. President, Professors and Classmates :

To few men does life bring a brighter day than that which places the crown upon their scholastic labors, and bids them go forth from the halls of their Alma Mater to the great world's battle-field.

There is a freshness in these early triumphs, which, like the bloom and fragrance of the flower, is quickly lost, never to be found again even by those for whom fortune reserves her most choice gifts.

Fellow-classmates, we have stood upon the threshold of the world ; of the many careers which are open to human activity, we have chosen *one*. Wordsworth says, "A noble *aim*, faithfully kept, is as a noble deed."

All men have an ideal, base or lofty, which moulds character and shapes destiny, and to a man who is a lover and connoisseur of animals, whose desire it is to live for a good purpose, the attainment of a profession by which he is enabled to scientifically treat, in accident or disease, any of the domesticated animals, and enhance their value and usefulness to man ; that is *his* ideal, the truest expression of his nature, one that he loves, and lives by, and, perchance, his ideal will be real and he will take rank with the profound thinkers and finished scholars of the world.

Not half a century ago was established in Boston by Dr. George Dadd, the first veterinary school in this country. There appeared to be at that time an impression that the work of a veterinarian was but a subordinate medical practice, so the teachings of the early days were given into the hands of physicians and surgeons, and not until there appeared a new generation of veterinarians did the great advancement in comparative medicine commence.

To-day, in the heart of this metropolis, occupying one of the foremost places in this great nation, resplendent in the glory of her achievements, is our college home. The spirit of research, independent investigation and self-reliance *is there* for inspiration.

The course of study, conducted by the most able instructors, has been broad, extensive and thorough in every detail.

The mode of teaching has been so practical, so comprehensive to the student, that he cannot help being able to cope with all the difficulties incident to his profession, and catch the inspiration of future development.

The interests in the animal world have grown so varied and extensive, veterinarians are now looked to for protective measures in the food supply derived from animals. They are expected to be comparative pathologists able to treat diseases of each species of the domestic animals, to know the nutritive needs of animals kept for different purposes and doing different kinds of work. How to utilize to the best advantage the different products of the farm for growing animals for meat or milk ; also, to understand the physiology of the reproductive processes of the animal kingdom, the laws governing heredity, and the influences and conditions that may be applied to improve the offspring, that they may be made stronger to endure work and resist disease.

They are looked upon as safeguards to public health, inspecting animals subject to diseases transmissible to man.

In view of the foregoing we are justified in saying that the veterinarian has by the force of unrelenting efforts and the most discouraging conditions, finally achieved the distinction which he merits.

Although we have been of one mind in choosing our profession, dug and delved from the same old text-books, wrestled with Chauveau, Friedberger, Fröhner and Stengel *together*, listened to the same able teachers, who have been untiring in their efforts to stimulate and direct the energies and impulses of each and every one of us, who have marshaled us from the

hard prosy studies of anatomy, physiology and chemistry to bacteriology and its microscopical revelations, who have taught us principles, and how to apply our knowledge, and the way to gain more, and especially have they labored unceasingly to inspire us with a love of mental exercise, instilling us with self confidence sufficient to commence our life's work ; although we have all had these same advantages and may have the same ability, our faine and fortunes will be varied.

To-morrow we shall leave these halls, around which so many pleasant recollections hover, to continue amid other surroundings the work of veterinary science, which *here* has but begun. It is my earnest desire that you go forth filled with resolute will and noble enthusiasm to labor, even to the end, in building up that being which is *Yourself*, and increasingly approach the finest type of perfect manhood, feeling and understanding that no labor can be too great or too long if it results in the advancement of veterinary science.

In the *practice* of your profession train the mind to habits of patient attention, and careful observation, remembering that suffering is hard to bear, and pain cannot be quiet. Be always conscious of the fact that a veterinarian is not a second-rate doctor, nor a jockey, neither does he belong to the great American army of *horse doctors*, nor does he belong to the subordinate branch of the medical profession. He *can* be, however, the natural and highest authority on questions pertaining to comparative medical science, therefore let your every act be such as to maintain the dignity of your profession, that this science may grow and be strengthened, until it takes its proper place among the economy of nations.

Fellow-members, we part to-day, perchance to meet no more. Yes, to meet no more, for in this ever-changing world, the finite mind cannot foretell, what may befall us, ere the break of day. But on each succeeding anniversary of this day, this day of sadness and of triumph, may our thoughts go back to when we were standing on the threshold of a new life, so full of hope, and so eager for action, whether the best successes have

been our lot, or whether we have drank deeply of the bitter cup of failure, let our thoughts revert to the happy days in the C. V. C., gone to return no more.

My best wishes go with you, that you may ever be an honor to your calling, and God forbid that any one of us shall in any way disgrace our chosen profession, the profession of humanity, or reflect anything but praise and credit upon the school of which we are so proud.

To the President and Faculty: In behalf of the class of 1901 and 1902, I wish to express our gratitude, and our appreciation of your patience and forbearance. We realize now as the time draws near to say good-bye, how much you have endeared yourselves to us, by these and many other considerations, and while you journey down life's pathway and near the unknown land may you be endowed with those priceless *riches*, contentment and the knowledge of a work well done.

THE annual announcement of the Ontario Veterinary College, Limited, Toronto, Canada, has just been issued. The session will commence this year on Oct. 15.

A NEW ANÆSTHETIC.—The following item is from the Lexington (Mo.) *News*, of July 31: "*Magnetic Hypnotism Successfully Practiced on the Horse*.—Dr. Smith removed a large lime deposit from the shoulder of a horse belonging to Mr. Ragsland, of Mayview, which was of several months duration, and had become deeply encysted between the muscles. During this entire and painful operation not an anæsthetic was used. The animal was under perfect control and remained quietly standing until the end, showing conclusively the effects and power of magnetic hypnotism in the lower animals. In order to eliminate to a more or less degree the pains and sufferings of the dumb brute, Dr. Smith has spent much time and study on this especial branch of science, whereby he might become able to control his patient, and especially the horse. This demonstration was his most successful one, and up to the present time the horse is recovering nicely." [The "Dr. Smith" referred to is Dr. George I. Smith, of Lexington, Mo., who has reported some interesting cases in the REVIEW. If he is responsible for the above item, we trust he will write and explain the method which he has adopted.—EDITOR.]

PHLEGMASIA DOLENS, OR WHAT?

BY DR. C. A. MCKIM, NORFOLK, NEB.

Read before the Iowa-Nebraska Veterinary Medical Association, Omaha, October, 1901.

In selecting this subject for my paper before this association, I have not done so thinking I know much about it, or that I can give you anything new or of importance in regard to it; but its being of rare occurrence and having happened in my practice at two different times, once in a cow and once in a mare, I was led, or compelled, to give it some extra study, so thought it might be of interest to you.

The definition of the word "*phlego*" is to inflame, and of "*phlegmasia dolens*" or "*phlegmasia alba dolens*," an acute œdema of the leg, from venous obstruction—a white, firm swelling of the legs after delivery.

On March 25, 1898, I was called to see a cow belonging to our dairyman, which, he said, was one of his best milkers. On my arrival at his farm I found the patient in his cow stable (which was a very good one, well built, ventilated, drained, and well lighted). The owner informed me that the cow had calved a few days before, not stating just how many days; and apparently had no trouble in giving birth to the calf. The owner was also sure she had passed all of the placenta or afterbirth, and he had thought, up to the day before my visit, she had been doing very well. Then he noticed a slight discharge passing from the vulva. She was restless, and refused her feed, or only ate indifferently. She also strained some and made frequent attempts to micturate.

By examination per vulva and vagina, I found the mucous membrane injected; the os uteri was so firmly constricted I could not at first pass my index finger into it. I removed from the vagina long strings or masses of dark yellow, or chocolate colored mucus. The pulse was quick and frequent. I have forgotten now the degree of fever, but her temperature was elevated. She would lie down and be disinclined to rise, lying on her side and grunting. My diagnosis was acute septic metritis.

As the cow had received good care and feeding and been in warm quarters, I could not say it was caused by neglect or taking cold, but considered it due to absorption of some septic material, probably part of the placental membranes, but I could not dilate the os sufficiently to get my hand into the uterus to make an examination. I introduced my female catheter through the os and flushed out the uterus and vagina with a solution of permanganate of potash, having the water as hot as I could bear my hand in it; this I injected with my injection pump. This was repeated every other day at my visits, as the owner could not attend to it himself. It should have been done once or twice a day. After using the permanganate a few days I alternated with a lysol solution. I also prescribed a fever mixture and later a tonic or stimulant.

With this treatment the cow improved slowly, but on April 1 the owner came in and told me the cow was lame in the left hind leg. I promised to go out the next day. I did so, and found her suffering from a good deal of pain in the leg. It was swollen at and a little above the fetlock, was hot and painful to the touch. I asked the owner if she could have hurt herself in any way, but he could not account for it at all. There were no signs of any injury. I, however, prescribed for a sprain, hot fomentations and bathing with a liniment and bandaging.

At my next visit imagine my surprise and puzzle in finding the cow's leg swollen nearly up to the body, the swelling being œdematos; the lymphatics on the inside of the leg enlarged and corded. My first impression was,—Is it a case of lymphangitis?—but I thought not. I continued my hot applications and liniment, also the fever mixture, and instructed the owner to come in and let me know how it was the following morning.

I admit I was bothered to account for the conditions presented in the case unless I might call it septic infection from the uterus, and I did think of a pelvic abscess, but could not locate one. The limb swelling first at the fetlock was a puzzle, but now I can account for it, if there was a venous obstruction.

I had, a short time before this secured Dalrymple's "Veterinary Obstetrics," and I will now give you his description of my case, which I concluded was phlegmasia dolens :

"This condition," he says, "is more common in the human subject than in the lower animals. It appears generally a few days after parturition. It is due to an obstruction of the lymphatics of one or more limbs, or of the femoral, or femoral and iliac veins, and is followed by oedema of the affected limbs."

"The cause is believed to be pressure of the uterus or thrombus, due to obstruction by some foreign material from the uterus."

The American text-book of "Obstetrics" calls it "Phlegmasia Alba Dolens," and says : "It may be due either to phlebitis or to cellulitis; often both conditions are combined. In the phlebitic form one or more veins form solid strings and below the obstruction the extremity becomes oedematous and swollen. In the cellulitic form the skin is white or pink, tense and hard, one or both legs swell and the epidermis may be lifted by a serous fluid, forming large vesicles. The inguinal glands swell. Suppuration and mortification may spread destruction in the connective tissue under the skin, or between the muscles. This pernicious form, however, is rare." [But in my case in the mare, as I will describe, I had all the above conditions.] "Commonly the inflammation begins the second week after confinement."

"The lymphatics on the inside of one or both hind limbs become enlarged and corded, somewhat resembling lymphangitis. This is followed by oedema of the whole limb, the animal loses the power of the limb [in my cases this was only partial], first at the fetlock, then all of the joints become affected and ultimately the patient gets down. On examination the limb is found to be swollen, hot, and very painful.

"The disturbance is considerable and much fever is present. The pulse is hard, quick, and frequent. There is inappetence and the secretion of milk much diminished. If the patient is carefully treated these symptoms gradually disappear, but in

some cases it runs on, inflammation of the tissues of the limb generally takes place, and abscesses form, chiefly at the hock ; the animal may die from anaemia, septicæmia, or traumatic fever."—(Dalrymple.)

All these symptoms were marked in my case, the cow gave hardly any milk, a large abscess formed at the external lateral aspect of the hock, and I could pass my long probe for twelve inches up under the perforans and perforatus tendons and up under the postero-internal aspect of the limb. The discharge was of a yellow or creamy color, and the owner asked me if it was not the milk coming down that way.

Dalrymple says, if the patient be a mare put her in slings. Give a laxative in all animals, followed by febrifuges and diuretics. Where the limb is very painful, hot fomentations may be used in the first stage, and judicious scarification if the effusion is considerable.

Patients that will not permit of slinging, should be turned every three or four hours. When the acute stage has been passed, bandaging will assist absorption, and diuretics, absorbents and tonic should be given.

The phlegmasia usually runs its course in from three to six weeks and ends in resolution—it may pass into suppuration and the patient still recover ; as a rule the thrombus is absorbed and the swelling subsides.

I followed the above treatment as suggested. The abscesses I treated twice daily with hot poultices and syringing out the cavities when poultices were changed with a lysol solution. The discharge per vagina was stopped and the animal made a recovery in about six weeks.

On April 13, 1900, I was called out to see a large black mare. She had a colt about ten days old. The owner had thought her all right until this time, but she now began to refuse her feed and seemed in pain. There was a discharge from the vagina, which he said had been so since she foaled. I could discover nothing but the discharge and she disliked to have me examine the vagina as if it gave her pain. I left a wash for the

vagina and a tonic and fever mixture. Her temperature was about 102° F.

The owner reported in a day or so she was doing well.

On April 23 he came for me again, and when I got out to his place I found the mare in a good deal of pain, the fetlock swollen and hot. She could not bear her weight on it very well. I could find no swelling or soreness higher up, at this visit, but I suspected it was phlegmasia and prescribed as above.

On the 28th her leg was swollen nearly to the body, and all other symptoms of the disease were present. In a few days a hard, firm swelling appeared over the gluteal muscles of the left side and I could detect it with my hand in the vagina.

On May 5, when I went out, I found her down and unable to rise. The owner said we might as well kill her. I found the abscess in the gluteal muscles ready to open and made a long free incision, and I believe more than a gallon of pus escaped. This should have been opened several days earlier, but the owner had been in and told me not to come out, as he thought it no use, but I went out on this trip anyway. After the pus escaped I took my long seton needle and passed it into the cavity until I could feel it through the vagina, and I made a good free opening into the vagina and about eight inches in from the vulva. Then I flushed the cavity out thoroughly with a permanganate wash. The mare got up before I left. I treated her similar to the cow, and she made a nice recovery in six or eight weeks and is still alive and working, although away up in her teens.

Thanking you for your kind attention, and, while I doubt if I have repaid you for your time in listening to me, I trust the discussion of the paper may bring out some points of interest and value to us all.

NEW YORK STATE VETERINARIANS who have been voicing their discontent at the non-enforcement of the veterinary laws should attend the State Society meeting, at Brooklyn, 9th and 10th inst., and lend their aid, or forevermore hold their peace.

BRIEF NOTES ON THE TREATMENT OF DIARRHŒA AFFECTIONS IN ANIMALS.

BY P. A. GIRARD, M. D. C., NEW RICHMOND, WIS.

In the treatment of diarrhoeal affections in domestic animals I have found that we can avail ourselves with advantage of some of the newer intestinal astringents and disinfectants which have been so widely discussed in late years, and which have proved so valuable an addition to the list of remedies. My experience with one of these, tannopine, has been so gratifying that I would briefly review the results of my observations.

This drug is a chemical combination of tannic acid and hexamethylen-tetramine. It is a reddish-brown powder, insoluble in water and weak acids, and contains about 87 per cent. of tannic acid. It passes unchanged through the stomach, its action being entirely confined to the intestinal canal, in which it splits up into tannin and ammonium formaldehyde. Owing to this peculiarity it will not upset the stomach, and as its decomposition in the intestine is slow and gradual the effect extends down to the lower portions of the bowel. For this reason it is applicable both in catarrhs of the upper and lower intestine. Aside from its astringent property, tannopine is an excellent disinfectant, this being due to the fact that the hexamethylen-tetramine, which is one of its components, sets free formaldehyde, which is one of our safest and most efficient internal antiseptics.

Dr. A. C. Hassloch, of New York (*AMERICAN VETERINARY REVIEW*, November, 1900), considers tannopine of great service in the treatment of diarrhoeal affections, acute and chronic intestinal catarrhs, and enteritis of horses and cattle and the smaller animals. Following his recommendation I have used it in similar cases. Owing to its tastelessness it can be easily given in the feed.

Last September I was called ten miles to see a cow affected with acute diarrhoea. The animal was passing thin, watery, mucous fluid. She was so greatly exhausted as to be unable to

be on her feet and had been in that condition for two days without taking any food. I administered three drachms of tannopine, and ordered the same dose to be repeated in two hours until three had been taken, and then the same amount every three hours for two doses. After that the drug was to be continued in two-drachm doses three times daily. The next day, in the evening, the owner reported that the diarrhoea had ceased that morning. There was no more straining and the appetite had greatly improved. No further treatment was required.

Another case was that of a western horse that had been brought from Montana. He had never had a halter on, and was as wild as a broncho, so that it was very difficult at first to corral him. When I saw him, however, he was so weak that I found no difficulty in administering four drachms of veterinary tannopine. I left four more powders of three drachms each, and ordered one to be given every three hours, at the end of which time the owner was to report to me. By that time the horse had so much improved that I was informed that he did not require my services any further. The appetite was good and the animal had resumed its former friskiness.

These two cases are cited only to show the promptness with which the remedy usually acts in diarrhoeal conditions, and my results have in general been so satisfactory that I have no hesitation in recommending the drug for general use in the treatment of the various forms of gastro-intestinal catarrh, both of acute and chronic character.

VETERINARIANS of New York State should be in Brooklyn on Sept. 9 and 10 to witness and participate in the surgical clinic at the meeting of the State Society.

MOLASSES, or syrup, is becoming quite popular as a food for horses in New York, and a number of veterinarians are experimenting with it in large stables of their clients. The high price of oats has compelled owners to try for some ration that is cheaper, and yet will produce muscular strength and adipose tissue. Dr. Berns, of Brooklyn, will present his experience with the food before the New York State Society, which meets in Brooklyn, Sept. 9 and 10.

REPORTS OF CASES.

"Careful observation makes a skillful practitioner, but his skill dies with him. By recording his observations, he adds to the knowledge of his profession, and assists by his facts in building up the solid edifice of pathological science."

PARTURIENT PARALYSIS PRIOR TO PARTURITION—FATAL.

By JOHN J. REPP, V.M.D., Professor of Pathology, Veterinary Division, Iowa State College, Ames, Iowa.

Subject.—A pure-bred Jersey cow, large size, 8 years old, good condition, heavy milker, expected to calve at any hour.

History.—Cow completed nine months of her gestation period June 17, 1902. She was on pasture about one-half mile from her stable, to and from which she was driven daily until the evening of Wednesday, June 25, 1902. The grass she obtained in the field was her sole diet. June 26th she was kept in the stable yard and fed a small amount of ground corn and some blue grass which had been mowed a week before. On June 20th milking was begun and continued to the time her illness began. The cow had no previous illness except an attack of conjunctivitis about a year ago. On Thursday morning, June 26th, she ate, but not with the usual avidity. Shortly after feeding she was noticed to stagger in walking and when she lay down had some difficulty in rising. Her muzzle was dry. She had not defecated or urinated during the morning. The owner sent for me and I arrived at 11 A. M.

Observations and Treatment.—The cow was lying on her sternum and was unable to rise, although she made several attempts on being urged; temperature, 100°; pulse, 64; respiration, 20, with expiratory sound much accentuated; muzzle dry; udder very pliable; slight curve in neck when animal attempted to extend it; at intervals the head would be carried around toward flank and kept there momentarily; consciousness and sensation slightly impaired; occasionally she would throw her head to the floor with slight violence. On examination per vaginam, it was found that the os had not yet begun to dilate and that the presentation was normal. There was no evidence that labor had begun. I made a diagnosis of parturient paralysis, and at once gave $1\frac{1}{4}$ grains of strychnine sulphate hypodermically; then withdrew the milk, washed the udder and teats with soap solution and disinfected them with 5% solution of carbolic acid in warm water; injected into the udder one quart of water in which was dissolved $2\frac{1}{2}$ drams of

potassium iodide; emptied the rectum with the hand; gave subcutaneously 1 dram fluid extract of digitalis; had the cow propped up on her sternum; gave directions to keep her in that position and to prevent her from injuring herself by violent movement, toward which she manifested more than the usual tendency.

At 6.30 P. M. I was telephoned by the owner to come to the cow as soon as possible, as she had been getting gradually worse during the afternoon, and had been rather violent in her action. I arrived at 7 P. M. The cow was lying with her head upon her side, a position which she kept most of the time, exchanging at intervals and for short periods, for the latericum-bent position. She threw her head with moderate violence occasionally; was in a semi-comatose condition; temperature 101°; pulse 80 and of fairly good quality; respiration 40 with loud groaning expiratory sound; the rectal mucous membrane was highly congested, some blood issued from it, and it was relaxed so that a small fold protruded; still no sign of labor.

She was given through the teats 2 $\frac{1}{2}$ drams of potassium iodide in one quart of water; was given a rectal injection of 2 gallons of warm water, in which 4 ounces of sodium chloride had been dissolved; six quarts of highly colored urine was withdrawn with the catheter; one-half dram of fluid extract of digitalis was given hypodermically. The cow was then left resting somewhat easier.

At 10 P. M. I returned and was told that the cow had been somewhat violent. She was still about half conscious; respiration and pulse about as on previous visit; animal lay on her sternum with nose in flank the greater part of the time; no evidence of labor. I gave one-half dram of fluid extract of digitalis hypodermically.

At 7 o'clock the next morning I was informed that the cow gradually became weaker and weaker, more and more nearly comatose, and died at 3 o'clock A. M.

Autopsy.—There was found a large, fully developed female foetus in normal position; kidneys congested, perhaps the seat of an acute parenchymatous inflammation; capsule stripped off easily; udder congested; the lymphatic glands of the udder showed petechiae in the cortex. All other organs were in a normal condition except for some post-mortem congestion.

Remarks.—This case is notable on account of its occurrence before parturition. It was of a malignant nature from the beginning, and progressed to a fatal termination within about 21

hours of its onset, with its course but little modified by treatment. It is a rather common experience that cases showing the tendency to excitement are more apt to be fatal than when the animal is overcome by coma and remains quite. A number of veterinarians have told me that they dislike the violent cases as they are less apt to yield to treatment. This is my seventh case of parturient paralysis within a year. The other six recovered.

SOME MORE BENEFITS DERIVED FROM GLYCO-HERÖIN (SMITH) IN THE TREATMENT OF COUGHS.

By GEO. W. MEYER, D. V. S., New York City.

In the June issue of the REVIEW, I was very much interested in the article by Dr. DeVine, on "Glyco-Heroin (Smith), in the Treatment of Coughs." His experience of an obstinate cough fitted mine to a letter, having at the time a case that made me feel it was beyond a cure.

Not having tried glyco-heroin before, I lost no time in sending down to the Martin H. Smith Co., at 105 Chambers Street, New York City, and procured several bottles, with the following results :

Case No. 1.—Roan gelding, five years old, draught horse ; had a severe attack of laryngitis about three months ago. Cough had never left him. The usual remedies that generally relieve a cough were tried, until patience on both sides, that of the owner and myself, was pretty nigh exhausted, and decided that this would be a good case to test glyco-heroin. So the driver of above horse was supplied with an eight-ounce bottle of glyco-heroin, a syringe ($\frac{5}{j}$) and a vessel to measure an ounce, and directed to give $\frac{5}{j}$ every two hours. As he was interested in getting his horse well, he faithfully administered the medicine. This small amount was given him so as to compel him to stop every second day for a fresh supply, thus enabling me to get a report as to how he was progressing. After the first eight ounces were given, a marked improvement was noticed ; the eight-ounce bottle was refilled, and so on, and each time the supply was given, an improvement was noticed, until three pints were used, when the driver came in smiling, returned the syringe and a few ounces of glyco-heroin, saying the horse had not coughed for the past few days, and didn't think he would need any more medicine. Three weeks are now passed since his last dose, and nothing mentioned of that dreaded cough.

Case No. 2.—Black gelding, six years old; laryngitis acute; temperature 103° F.; appetite slight, cough dry and often; nasal discharge slight. Counter-irritant applied and usual remedies. Following day temperature $105\frac{3}{5}^{\circ}$; appetite none; cough very frequent. Acetanilid ($\frac{3}{j}$) given; glyco-heroin (Smith), $\frac{3}{j}$, every two hours. Following morning, at 8 A. M., temperature $102\frac{2}{5}^{\circ}$; appetite slightly improved; coughed not so frequently; nasal discharge increased; glyco-heroin continued, $\frac{3}{j}$ every two hours. After the third dose, large hard pieces of phlegm were blown from nostrils. At 6 P. M. seemed to look for feed, and did finish two quarts of soft feed. Next day, 8 A. M., temperature $100\frac{2}{5}^{\circ}$ F.; good appetite; much brighter spirits; coughed but once; nasal discharge decreasing; medicine reduced to $\frac{3}{j}$ (t. i. d.). Following day temperature 100° F.; eating feed with a relish; no cough noticed; nostrils clean; everything normal; medicine stopped; gentle exercise ordered. Has worked each day, and at last report has not been heard to cough since.

Case No. 3.—Bay gelding, nine years old, about 1500 pounds. Coughed for about two months. Nothing had been given to relieve it; owner simply thought his horse had a slight cold, as he fed well, seemed all right, and worked each day. Finally, getting tired of hearing the cough, decided to see about it. Glyco-heroin (Smith) was given, $\frac{3}{iss}$ every two hours; no more was needed than the Oj; the cough disappeared.

Case No. 4.—Iron grey gelding, four years old, large truck horse; had a cough when purchased three months ago; had an attack of pneumonia. When convalescent had a cough that seemed to "shake him all to pieces," was the stableman's expression; this was another good case for glyco-heroin. So a pint was supplied, with directions to give $\frac{3}{j}$ every two hours, and report when medicine was gone. The report was that the horse was "a whole lot better," but another bottle might help it. So another pint was supplied, with directions if cough did not stop, to call for more. As this was a valuable horse, the expense was no object. However, no more was needed; the horse was put to work, and by the time the second pint was used, the cough was entirely gone.

Case No. 5.—Bull terrier dog, coughed for about two days. It was an acute case of laryngitis, with high fever, no appetite, very much distressed, and very sensitive to touch in region of larynx. With each paroxysm of cough it seemed he would choke. Glyco-heroin was given ($\frac{3}{ii}$), half a teaspoonful every two hours; in two days so much improved that the next few

days half teaspoonful t. i. d. was given. Within a week dog was back to his former spirits and felt as if nothing had happened.

Case No. 6.—Grey gelding, ten years old, small delivery horse, coughed four or five times a day. This case was immediately sent for treatment. Received one ounce glyco-heroin every three hours. End of second day no more cough was noticed.

Case No. 7.—Fox terrier dog, would cough very frequently. Upon examination found to yield on pressure to throat, and cough when pressure was applied. A few questions brought out that he had pulled very hard on collar, not being accustomed to being tied. Glyco-heroin was given, half teaspoonful t. i. d. Owner reported after week elapsed, that the dog stopped the cough on the second day, but thought it best to finish the medicine.

Case No. 8.—Grey gelding, ten years old, large draught horse. Symptoms very much the same as case No. 2. Acute laryngitis, temperature 106° F. Very much distressed, could swallow very little water, most of it returning through the nostrils. Counter-irritant applied, and glyco-heroin given $\frac{3}{4}$ j every two hours. Next day not much improvement, temperature $105\frac{3}{4}^{\circ}$, appetite none whatever; gave $\frac{3}{4}$ ii glyco-herion every two hours, with a better result. The nasal discharge increased, large hard pieces of phlegm falling at bottom of pail when attempts were made at drinking. Following day slight improvement in appetite. Temperature 102° . In drinking, quite some water returned through the nostrils. His cough was decidedly improved, and on this day had eaten two quarts of feed at a meal. The dose was now reduced to $\frac{3}{4}$ j every two hours, and at the end of three days temperature was 100° F. Appetite good, the discharge from nostrils very slight, general appearance very bright, with only an occasional cough. On second following day was put in for half day's work, which was slow, and medicine given t. i. d. After a week was passed no more cough was heard, and horse is as well as ever.

From the beginning I could see many advantages in the use of glyco-heroin (Smith). It being of a syrupy consistency, which when syringed into the mouth, sticks to the tongue and lips, thus hardly a drop is wasted by spilling. It is very convenient to administer, besides having a pleasant taste, the patients seem to like it, but the most important of all is the rapid and permanent recovery each case has made, and I feel that if any fellow-practitioner is in trouble with a case of cough, he

will have a remedy in glyco-heroin (Smith) that will help him out.

PARTURIENT PARESIS (?)—SCHMIDT'S TREATMENT, MINUS THE IODIDE OF POTASSIUM.

By W. E. A. WYMAN, V. S., M. D. V., Portland, Mich.

The writer always had serious doubts about the correctness of a diagnosis "parturient paresis" in cows which calved six days or more previous to the setting in of milk fever. Nevertheless, the writer's equilibrium in regard to this orthodox point of view was seriously interfered with on July 16th. The subject was a Holstein four-year-old, which calved on the 2d day of January, 1902, supposed to be with calf since February, 1902. This animal had been bought six weeks ago by its present owner, and being in poor flesh was grained heavily. She was apparently in good health on the 15th and down and unconscious on the 16th A. M. The writer, who was called at this time, found her in a semi-comatose condition. Temperature 98° F., respirations 8 per minute, surface temperature unevenly divided, she being icy cold along the spine; tonic spasms of the muscles of the neck, head drawn toward the right shoulder; pulse 62 per minute, irregular and small; visible mucous membranes icteric. Pregnant, calf alive. Food and water beyond criticism, except the quantity of nitrogenous food, which had been excessive. The owner called it milk-fever,—the writer followed suit willingly, not because he believed it to be an honest case of parturient paresis, but simply because the owner was agreeable, it being a case where the better part of valor was silence. The animal was given 1 gr. of strychnia sulphatis hypodermically and two quarts of boiled water were injected into the udder. It will be noticed that no potassium iodide was used. The writer does not employ iodide of potassium in the treatment of parturient paresis for quite some time. The first time when the writer injected a milk-fever bag without the K. I., it was a case of necessity, not of choice, simply because I did not have the K. I. with me. This cow was up and doing well on the following morning. This opened the writer's eyes a little. The next cow also got up all right without K. I. in the injection. In fact, almost all cows with parturient paresis will get up after one to three injections of either purely boiled water, saline solutions or my favorite saline solution plus one-fourth per cent. of carbolic acid and one-fourth per cent. of glycerine added. After this deviation from the case under dis-

cussion, which at the same time upsets the Danish (that is Dr. Schmidt-Colding's) theory as to the cause of the disease and the specific nature of the treatment, let us return to our case.

As previously stated, the cow was seen in the morning of the 16th and up and eating that afternoon about 5 P. M. Now, did that cow have parturient paresis (I cannot see where the parturient part comes in), or a disease which closely resembles it? A theoretical discussion of the etiology, potassium iodide treatment versus saline infusions, etc., will appear elsewhere.

COMPLICATED FRACTURE OF THE INFERIOR MAXILLARY BONE.

By A. W. BAKER, V. S., Brasher Falls, St. Lawrence County, N. Y.

In looking over the REVIEW I often see articles on the different fractures treated by veterinarians, but I never have seen one of a nature, so peculiar to itself, as one that came to my personal observation a short time ago in practice.

It was a complicated fracture of the superior extremity of



the mandible, about two centimetres below the condyle and coronoid process. The jaw was turned to one side at an angle of about forty degrees.

The patient was a valuable gray mare, weighing about 1300 pounds, and owned by W. W. Phelps, having caught her head

in a cow stanchel, and, being of an ugly nature, put up a fierce struggle to remove her head, and produced the above injury. She at once had to be thrown to proceed with an examination, which when properly secured I found the foregoing to be the case and had my doubts as to my doing anything of any particular benefit to the animal. The owner, however, insisted on my trying, so I at once proceeded to straighten the jaw to its proper position.

Modus Operandi.—Having got some cotton, bandages and shingles (the only thing available), and, with my assistants, I placed them in the proper position and bandaged them there, to keep the jaws straight and from lateral movement. For a few days the swelling increased rapidly, and I thought perhaps tracheotomy would have to be performed in order to insure freedom in breathing, but gradually the swelling began to go down, and in fourteen days I changed the bandages and splints, allowing a slight increase in movement of the jaws, and in twenty-one days more I removed them entirely, with a very satisfactory result.

She had lost considerable flesh, having been fed on gruel for so long a time, but otherwise she had recovered with no landmarks of any kind that could be observed, and she is now valued at as much as before. To me, a practitioner of forty years, I have never seen a fracture in such a location and of such a nature. I find that the best results are obtained when the splints are *practically* fitted to the injured parts, even though in a crude form or shape.

THE British Government is conducting extensive experiments in South Africa with a view to discovering some means of immunizing horses against the attack of the tsetse fly, the bite of which has so far proved fatal to all animals but man and the ass. It is thought that the process of immunization may be accomplished by the treatment of infoal mares shortly before parturition with the attenuated virus obtained from making cultures from the poison as exuded by the tsetse fly.—(*Breeder's Gazette.*)

MORE TO THE PURPOSE.—One of our contemporaries contains a testimonial from a physician in favor of a certain proprietary laxative. The physician states that he is much pleased with its action, and adds: "I use it freely. It certainly fills a long-felt want." He should add, "and empties a long-filled bowel."—(*Medical Journal.*)

REVIEW OF BIOLOGY.

TOXONES OF TUBERCULIN [*S. Arloing and A. Ducos*].—Erlich has recognized, in diphtheric toxine, two direct products of the bacillus of Loeffler, having different properties; those products were toxines and toxones. The first, having specific morbigenous properties, produce an acute intoxication and are able to neutralize a mathematic quantity of antitoxine. The second give rise to later or slower accidents of diphtheric intoxication; they have their special character. The authors have inquired whether substances analogous to toxones could not be discovered in tuberculin, and have concluded from their researches as follows: (1) Upon healthy subjects, the immediate action of tuberculin can be suppressed by addition to the tuberculin of a given dose of antituberculous serum; (2) The neutralizing action of this serum is principally marked upon the local effects and less on the general. Animals that survive lose flesh in great quantity; (3) The toxicity remaining in the mixture can be attributed to the toxones of tuberculin; (4) To isolate the toxones of tuberculin, two or three times the serum antituberculous must be added to it; (5) The proportion of the mixture will vary according to the toxicity of the tuberculin and the quality of the serum; (6) A too high dose of serum will add to it its contingent of toxicity.—(*Soc. de Biolog.*)

ACHONDROPLASY AND MYXEDEMA [*P. Leblanc*].—Achondroplasy is that disease which gives to calves the peculiar physiognomy called bull-dog calves, turtle calves. All the long bones at birth possess a consistency analogous to that of adult animals, which seem to indicate that periostic ossification has not been altered. Cartilages of conjugation are wanting. Besides, achondroplasy of calves is often accompanied with myxœdema and pathydermic cachexia. These coincidences will make one suppose that achondroplasy may be of thyroid origin.—(*Soc. de Biolog.*)

SCLEROSTOMES OF EQUINES [*A. Raillet and A. Henry*].—Recent researches, and particularly those of Looss in Egypt, have increased the number of sclerostomes that live in the digestive canal of equines. Looss has found, besides, three genders in those nematods. The researches of the authors have shown that those new genders (*Cylicostomum*, *Triodontoporus* and *Gyalocephalus*), have, as the gender *Sclerostomum*, numerous representatives in equines of our region. *Sclerostomum* has

three species, which, when adult, are found in the cæcum and large colon of horses: (1) *Scl. equinum*, somewhat common with young forms in parenchymas; (2) *Scl. edentatum*, in some organs with immature forms; (3) *Scl. vulgare*, the most common of the three, found in verminous aneurisms, mesenteric glands, and sub-mucous nodules of the cæcum.—(*Soc. de Biolog.*)

VIRULENCY OF THE BLOOD IN OVINE VARIOLA [*F. J. Bosg*].—The experiments of the author have shown him that in ovine variola the blood of the *pre-eruptive* period is virulent. After cutaneous inoculation, the blood is resorbed, an induration is left, which spreads and gives rise to the formation of a tumor with eruption, strictly localized to its surface; this precedes the generalized eruption by a few days. The blood of variolous animals, taken during the *eruptive* period, is virulent to the same extent as that of the pre-eruptive. Inoculation of the blood, in sufficient quantity, gives rise to a fatal variola, which develops as if it was pure infection, but with characters which appear in proportion with the small number of the parasites in the blood, at least with subcutaneous inoculation; that is, to the point of view of local tumor, localized eruption.—(*Soc. de Biolog.*)

A TALE WITH A MORAL.—Some doctors were talking the other day, says a New York paper, about the case of the Western woman who was indignant to find that her vermiform appendix had been removed when she hadn't expected it. One of them told this story: A man was struck by a car on Broadway. He was removed to a hospital in an insensible condition. After a cursory examination a surgeon said: "We had better operate at once for appendicitis." The patient was stripped in order that he might be prepared for the ordeal, and this legend was found tattooed on his chest: "In case of accident don't operate for appendicitis. It has been removed twice already." Then they concluded that he was only suffering from shock.

VETERINARIANS OF NEW YORK STATE: Dr. Kelly's paper, "Enforcement of Our Veterinary Laws," opens up the subject of quackery in that State and how to wipe it out. Every qualified man should be at the meeting of the State Society on the 9th and 10th inst., and assist in devising ways and means for its accomplishment. A few energetic prosecutions will put the whole band to flight. Besides a very attractive programme is announced in another section of this number of the REVIEW.—("Society Meetings.")

CORRESPONDENCE.

SOME SUGGESTIONS AS TO VETERINARY POLICIES.

CHICAGO, ILL., June 14, 1902.

Editors and Readers of the American Veterinary Review:

For an indefinite period I should like to see each month a page of the REVIEW devoted to brief articles by veterinarians, discussing the illustrations employed, the comparisons made, the typical examples shown, the arguments presented, the fables related, the language used, the replies to usual questions, how much of the technical and scientific side to impart, and all in all the various means and methods the members of our profession have found the most proficient and successful in convincing the farmer, stockman, dairyman, packer and consumer and the laity at large, of the extreme virulence and importance of the various animal diseases, tuberculosis in particular; to gain their coöperation in stamping out the diseases, and to overcome their prejudices against the immediate financial loss to them that might result in employing some of the very radical means we find and will find necessary to carry out in order to effectually and eventually stamp out the disease. To prove the ultimate gain will outweigh the immediate loss. What will appeal most forcibly to them to do their part in this great work.

The campaign against tuberculosis must primarily be one of the education of the people, and whose duty is it to do this but the veterinarian's? For out of the people come the legislators and intelligent legislation, coupled with the public opinion that would naturally and necessarily follow such an education, are the main factors in the promotion of national, state, and municipal sanitary advancement.

It is true that some men have a knack of persuading individuals into believing things that are false, let alone what is true; while others cannot sometimes convince another of what is absolutely certain and proved. The latter appeal to the former to come to their rescue.

Such a solicitation of articles would bring forth a multitude of thoughts and ideas, some, perhaps, simple, yet powerful and never before thought of. Some suggestions will prompt others, and there will be set up an endless chain of psychoses, each helping each other and the selection of the best of these and their various combinations may bring about great results that

will give animal and mankind magnanimous benefit. And believe me to be, sincerely, BURTON R. ROGERS, D. V. M.

A VETERINARY TRIP TO THE PHILIPPINES.

PLAZA HOTEL, ASBURY PARK, N. J., August 16th, 1902.

Editors American Veterinary Review:

DEAR SIRS:—Knowing you to be interested in the veterinary profession in the United States Army, I will briefly record a trip to the Philippines, some experiences there, and return.

I sailed from San Francisco on Aug. 22d, 1900, with 722 head of stock, and on the journey to Kobe, Japan, lost about 15 cases of pleuritis and pneumonia. My horses had come up from Arizona, and as I sailed the northern route the horses upon the upper two decks were exposed to the cold winds. I unloaded at Kobe, Japan, and, after resting the horses for eight days, proceeded through the Inland Sea and China Sea to Manila, P. I. At Manila we received orders to proceed to Pasacao, on the Gulf of Ragai, and unload one squadron, the 2d Squadron to be unloaded at Legaspi.

At Pasacao I had to jump the horses overboard and swim them (two at a time) about one and one-half miles to the beach. I received telegraphic orders to leave the transport *Strathgyle* myself Nov. 8th, and proceed with the first squadron to headquarters at Nueva Cacéres, P. I. Dr. Welch, my assistant, proceeded on with the 2d Squadron to Legaspi.

The trip from Pasacao to Nueva Cacéres was without incident worthy of mention.

During the eight months I was stationed at Nueva Cacéres I was quite busy, having three corrals to look after.

During the first rainy season I had about 300 cases of erythema and cutaneous quittor, but had to operate on only five cases of cartilaginous quittor. I had 9 cases of tetanus, of which 5 recovered. I found 90 per cent. of the native horses glandered, and kept them as much as possible from contact with the U. S. horses.

In February, 1901, I was ordered to proceed to Iriga and the posts in that sub-district to inspect and report upon the condition of the horses there. I found but two cases of glanders, which, upon my recommendation, were promptly destroyed. In June, 1901, I was ordered to San José de Lagonoy. On my arrival there, Dr. F. F. Johnson, Post Veterinarian, reported eight cases of glanders. I inspected the animals and agreed in the diagnosis. I then malleined all the horses at that post and

five adjoining posts and the result was 80 cases. The Commanding Officer of the regiment refused to believe the disease was glanders and ordered me to treat the animals. I explained the danger to him and promptly started a letter of protest to the Adjutant-General, U. S. A., through military channels. Shortly after, I received orders to shoot the glandered animals, and the incident closed.

In September, I was ordered to the 3d Squadron at Legaspi, to look for glanders. While crossing the Gulf of Lagonoy on a launch, the captain in trying to find a new passage between two islands, grounded the launch on a coral reef and we had to wait seven hours for the tide to rise. In the 3d Squadron I found but four cases of glanders, but during October and November I found many cases of surra, about which the B. A. I. has recently published very edifying bulletins.

During the first week in December, I took to my bed with amoebic dysentery, and was sent to Manila for treatment. As it was a case of leave the country or die, I was sent to the U. S. A. General Hospital at Presidio, San Francisco, arriving there May 24th, 1902. After a month there, I was granted leave of absence, and am now here trying to recuperate (but at the end of the week will return to Pine Meadow, Conn.

S. GLASSON,
Vet. 1st Class, 9th U. S. Cav'y.

A HEALTHY SIGN OF THE TIMES—INCIDENTALLY A TRIBUTE
TO A VETERINARY SCHOOL THAT IS COMING TO THE FRONT.

CHICAGO, ILL., June 14, 1902.

Editors American Veterinary Review:

DEAR SIRS:—It was indeed a pleasure to read the following clipping from a paper of recent date regarding the commencement exercises of the Iowa State College, one of the foremost industrial and agricultural institutions of the country, showing what a prominent place veterinary education is taking :

“—sixty-seven degrees were conferred last night by Dr. Beardshear as follows:—In general and domestic science, ten ; civil engineering, six ; electrical engineering, six ; agriculture, nine ; VETERINARY MEDICINE, EIGHTEEN ; mining engineering, one ; mechanical engineering, six ; science, eight ;”—

More than twenty-five per cent. of the total number graduated ! An unprecedented record is established. With the exception of mining engineering, it is the youngest course in the school and had for a long time been considered as only a minor department. It is interesting to note in this connection that it

is true, notwithstanding the fact that the members of this class were subjected to much higher entrance matriculations than any class heretofore, and that the graduation requirements were raised considerably and the curriculum and the work between was increased, made more thorough both practically and theoretically, and hence much more difficult. One who has had any experience with Dr. John J. Repp, knows that he is one of the professors in this institution who, in the terms of the popular vernacular of the general student body, "*cannot be worked.*"

The student receives only what he merits, and unless he reaches a definite standard, and it is not a low one, cannot pass. The financial resources from tuition are *nihil* and not considered, not being relative to the success of the department. The doctor is to be commended in this regard. The perusal of such a policy shows plainly the greater proficiency in the end attained by the graduate, and later the veterinarian; who will be one among the many who are judged by the people at large and to the particular community to which he may go as a representative of the veterinary profession, happily changing the unfortunate previous view, perhaps caused by a lone eccentric "Quack," and to whom veterinarian in these modern times or at any time is decidedly a misnomer. BURTON R. ROGERS, D. V. M.

Bureau Animal Industry.

VETERINARY POSITIONS IN THE PHILIPPINES.—The United States Civil Service Commission announces that on September 30, 1902, an examination will be held at the places mentioned in the accompanying list for the position of expert in animal industry, in the Philippine Service, at a salary of \$2,500 per annum. Applicants should be graduates of veterinary colleges, and have a good knowledge of animal breeding and husbandry. Knowledge of the Spanish language will also receive consideration in selection for appointment. Age limit, 18 years or over. From the eligibles resulting from this examination it is expected that certification will be made to the position of expert in animal industry, in the Philippine Service, at a salary of \$2,500 per annum, and to other similar vacancies as they may occur in that service. Persons who desire to enter this examination should at once apply to the United States Civil Service Commission, Washington, D. C., for application Forms 304 and 375, which should be properly executed, including the medical certificate in Form 304, and filed with the Commission at the earliest practicable date.

SOCIETY MEETINGS.

PASSAIC COUNTY VETERINARY MEDICAL ASSOCIATION.

The regular monthly meeting was called to order by President William Herbert Lowe at 8.30 P. M., August 11, 1902, when Dr. David Machan was chosen Secretary *pro tem.* The following members answered to their names on roll-call: Drs. William J. Reagan, David Machan, Harry J. Berry, William H. H. Doty, William C. Ferguson, T. J. Cooper, M. A. Pierce, John H. Degraw, William H. Lowe, Jr., William Herbert Lowe, Paterson; J. Payne Lowe, R. O. Hasbrouck, Passaic; George W. Pope, Athenia; William J. Fredericks, Delawanna.

A telegram was read from Dr. William C. Berry, of Bloomingdale, expressing his inability to be present.

The minutes of the last meeting were read and approved.

The President called for the report of the Committee on By-Laws and Code of Ethics. Drs. Ferguson and Reagan, of the committee, reported that the By-Laws and Code were in course of preparation, but not yet completed, when, upon a motion made by Dr. Hasbrouck, the adoption of the same was laid over until the next meeting.

Dr. J. Payne Lowe, chairman of the Committee on Schedule of Fees, presented a carefully prepared report, signed by all members of the committee (Drs. J. Payne Lowe, William J. Fredericks and John H. Degraw), which upon motion of Dr. Reagan was fully discussed, and schedule, amended, adopted by a unanimous vote as amended, and the schedule was ordered printed, and a copy furnished each member, all members agreeing to govern themselves by the said schedule.

The report and schedule as finally adopted is as follows:

REPORT OF COMMITTEE ON SCHEDULE OF FEES.

Mr. President and Gentlemen:

The circumstances under which veterinary services are rendered vary greatly, and while we have made up and will submit a schedule of rates to be charged, we believe practitioners should use discretionary power in charging. Some men can command larger fees than others; men of reputation and experience more than young veterinarians. We should adopt no radical tariff of fees that will make us or our services unpopular with the public, or that will have a tendency to cause them to do without our services and to resort to empirical measures.

Our services are sought for as a rule for commercial reasons. We not infrequently treat very valuable animals. As a rule, however, most of us are called upon to save the life of a \$200 horse ; to restore to usefulness a \$75 lame horse ; to assist a \$50 or \$60 cow at the time of parturition. True, quite a few animals are treated where this does not obtain. The family horse, on account of his docile qualities, is often treated to an extent not in keeping with his market value, or occasionally it's an old animal that has been pensioned off until of necessity he is humanely destroyed. Or, again, in canine practice, it is often a matter of sentiment, so you see in practice it is not what we should receive for some fancy operation skillfully performed, but we must keep within practical bounds : in other words, the value of the animal treated must be considered. In cases covering a long period of time or terminating unfavorably it is not only fair, but it is policy some times to make concessions. The volume of work we do for a client should modify the fees ; or, again, poor people should be charged leniently or in extreme cases not charged, while those able to pay should be charged the full fee.

Your committee does not believe that there is any member of the Passaic County Veterinary Medical Association who would lower his dignity or undermine his brother practitioner by under-charging for his professional services, and the schedule of fees we have made up is merely as a guide to fellow-members, as to what we believe to be proper charges, and we respectfully submit it for your consideration.

SCHEDULE OF FEES.

General Practice.

Single visit in the city, \$2.

Ordinary visits within the city, \$1 to \$2.

Ordinary visits outside the limits of the city, \$2.50 and mileage.

Mileage at the rate per mile (according to the number of miles) 25 to 50 cents.

Advice given each additional animal at same visit, 50 cents to \$1 extra. Visits after 9 P. M., or before 7 A. M., or in haste, or in extraordinary circumstances, to be charged double.

Remaining in attendance all night, \$10 and upwards.

Detention in addition to visit, per hour, \$1 to \$2.

Surgical Practice.

Ordinarily, visits the same as general practice, or double if surgical dressings, etc., are applied.

Minor operations, \$1 and upwards.

Dressing abrasions, sores, etc., \$1 and upwards.

Suturing and dressing wounds (trifling in character), \$2 and upwards.

Blisters applied, \$2 and upwards.
 Insertion setons, \$2 to \$3.
 Phlebotomy (jugular), \$2 to \$3.
 Major operations, \$5 and \$10 and upwards.
 Suturing and dressing wounds (serious in character), \$5 and upwards.
 Neurectomies { Plantar (high or low), \$10 per foot and upwards.
 Median, \$15 per foot and upwards.
 Tibio-peroneal, \$15 to \$25.
 Operations for the removal of champignon, \$10 and upwards.
 Amputation of the penis, \$10 and upwards.
 Tracheotomy, \$5 and upwards.
 Use of the actual cautery, \$5 and upwards.
 Fractures (setting of fractured limbs, etc.), \$2 and upwards.
 Castration of the male—
 Single horse (normal) \$10.
 Two horses " \$15.
 Three " \$20.
 Four " \$25.
 Cryptorchid, \$25.
 Bull, \$ 3 to \$5.
 Dogs and goats, \$ 2 and upwards.
 Cat, \$ 1 and upwards.
 Pigs (single), \$ 1 and upwards.
 Each additional pig, 50 cents.

Ovariotomy—

Mare, \$25.
 Cow, \$10.
 Bitch or Cat, \$5.
 Sow, \$3. Each additional animal, \$1.

Obstetrical Practice—

Delivering foetus, dystokia cases, by natural passages, mare \$10 ; cow, \$5 ; smaller animals, \$2 and upwards.

Cæsarian Operation—Mare or cow, \$10 and upwards ; smaller animals, \$5.

Embryotomy—Mare or cow, \$10 and upwards.

Removal Placenta—Mare or cow, \$3 and upwards.

Replacing Everted Uterus—Mare \$5 and upwards ; Cow, \$3 and upwards.

Uterine Douches—\$2.

Dental Operations.

Filing molar teeth (under ordinary circumstances)—One horse, \$2 ; two horses, \$4. In large stables after the first two horses, \$1 per head.

Cutting elongated molars, \$3 to \$5.

Cutting incisors, \$3.

Extraction wolf teeth, 50 cents each.

Extraction temporary incisors, \$2.

Extraction molars, \$5 and upwards.

Trephining sinuses, \$10 and upwards.

Miscellaneous.

Consultation in all cases, \$5 and up.

Examination of horses for soundness, \$5 each.

Post-Mortem examinations, \$5 each.

Chemical, microscopical and bacteriological examination of urine, milk, etc., \$5 and upwards.

Chemical analysis in cases of poisoning, \$5 and upwards.

Opinion as an expert, \$5 and upwards.

Professional certificates, \$2 and upwards.

Assistant surgeon is entitled to a fee equal to one-half of that charged by the surgeon.

Office Practice.

Advice, \$1.

Advice by letter or telephone, \$1 and upwards.

Medicines.

Liniments, lotions, solutions, mixtures, etc., 50 cents to \$1.

Ointments, 50 cents to \$1.

Powders, per package, 50 cents to \$1.

Signed by the Committee, { J. PAYNE LOWE, *Chairman.*
 { WILLIAM J. FREDERICKS,
 { JOHN H. DEGRAW.

On motion by Dr. Hasbrouck, seconded by Dr. Pierce, the date of the regular monthly meetings was changed from the second Monday evening of the month to the first Tuesday evening of each month, except in the month of September, when the regular meeting shall be held on the third Tuesday evening.

President Lowe stated that the AMERICAN VETERINARY REVIEW, in the August number, had given three pages of its space to a report of the organization and the proceedings of the Passaic County Veterinary Medical Association, and an editorial that would make every veterinarian in Passaic county feel proud that he belonged to the local organization.

The President called the attention of the members to the fact that the State Association had at its last meeting appointed a Minneapolis party committee of which Dr. T. E. Smith, 309 Barrow Street, Jersey City, is chairman, and that the County Association should be represented at the meeting of the American Veterinary Medical Association at Minneapolis, and that any member, or members, that could go were invited to join the party going from this State on Saturday, August 30th. Dr. Cooper asked the President to represent the local organization, and upon his motion Dr. Lowe was elected the official delegate to the Minneapolis meeting.

It was also the sense of the meeting that the County Association should be represented at the forthcoming annual meeting of the New York State Veterinary Medical Society, to be held in Brooklyn, September 9th and 10th. Dr. Pierce moved that

the Chair appoint delegates to the said meeting. The Chair stated that he would appoint as such delegates such members as expected to be able to attend the meeting. After conference the Chair appointed delegates as follows: Dr. J. Payne Lowe; Dr. William H. Lowe, and Dr. William C. Ferguson.

The President requested practitioners who have students with them to advise them that the State Board of Veterinary Medical Examiners, under the law, would only recognize diplomas from colleges with a curriculum of at least three years.

On motion, meeting adjourned.

DAVID MACHAN, *Secretary pro tem.*

CONNECTICUT VETERINARY MEDICAL ASSOCIATION.

The semi-annual meeting was held at Hotel Hartford, in Hartford, Tuesday, August 5, 1902.

The President, Dr. A. Hyde, being absent, the meeting was called to order by Second Vice-President Dr. Harrison Whitney, at 3 o'clock. Seven of the 39 members responded to roll-call, as follows: Drs. L. B. Judson, of Winsted; P. F. Finnegan, of Hartford; E. C. Ross, of New Haven; C. R. Witte, of New Britain; Harrison Whitney, of New Haven; Geo. H. Parkinson, of Middletown, and B. K. Dow, of Willimantic.

Visitors:—Drs. G. W. Loveland, of Torrington, and Fred F. Bushnell, of Winsted. Also reporters of the *Hartford Times* and *Courant*.

The minutes of the last meeting were read and approved. It was voted to order 25 certificates of membership for the Association, and that the Secretary procure the same. It was voted to lay Article IV of the By-laws on the table until the annual meeting. The report of the Treasurer showed a balance of \$24.

Dr. Fred F. Bushnell, of Winsted, and Dr. G. W. Loveland, of Torrington, presented their names for membership in the Association. Their names were referred to the Board of Censors for their action.

The President, Dr. Andrew Hyde, formerly of Norwich, now employed in the United States Bureau of Animal Industry and located at Sioux City, Iowa, presented his resignation as President of the Association, which was accepted.

It was voted to hold the annual meeting of the Association at Hotel Hartford, in Hartford, the first Tuesday in February, 1903, at 3 o'clock.

Dr. Ross suggested that the President select three subjects for discussion at the next meeting. The President selected the following cases : (1) "Canine Distemper," (2) "Azoturia," (3) "Scrotal Hernia."

The matter of papers to be read at next meeting was left with the Secretary.

After discussing several interesting cases and talking over various matters pertaining to the profession, the meeting adjourned.

B. K. Dow, V. S., *Secretary.*

NEW YORK STATE VETERINARY MEDICAL SOCIETY.

TWELFTH ANNUAL MEETING, WILSON BUILDING, PIERREPONT STREET, NEAR FULTON STREET, BROOKLYN, N. Y., SEPTEMBER 9TH AND 10TH, 1902.

Officers, 1901-1903.—President—James Law, Ithaca ; Vice-President—James L. Robertson, New York City ; Secretary-Treasurer—Wm. Henry Kelly, Albany.

Censors.—Charles Cowie (Chairman), E. B. Ackerman, Harry Sutterby, H. D. Gill, E. B. Ingalls.

Committees.—Executive—James Law, (Chairman), James L. Robertson, George H. Berns, Wm. Henry Kelly, Charles Cowie. Legislative—Wm. Henry Kelly (Chairman), James Law, C. D. Morris, Arthur O'Shea, Roscoe R. Bell. By-Laws—Geo. H. Berns (Chairman), J. W. Corrogan, Wm. Henry Kelly, *ex officio*. Arrangements—Roscoe R. Bell (Chairman), Geo. H. Berns, James L. Robertson, E. B. Ackerman, Wm. Henry Kelly, *ex officio*.

The session will be held in the Wilson Building, Pierrepont Street, near Fulton Street, Brooklyn, N. Y. on September 9th and 10th, 1902, and will convene on Tuesday, Sept. 9th, at 10 A. M., when an address of welcome will be extended to the association on behalf of the City of New York, by Hon. Richard Young, Commissioner of Parks, Boroughs of Brooklyn and Queens, which will be responded to by President Law.

After the business of the society has been disposed of there will be the following :

PRESENTATION OF PAPERS.

"Veterinary Dentistry," by Dr. Robert W. Ellis.

"Retained Placenta," by Dr. W. L. Williams.

"The Etiology of Shoe-Boil," by Dr. Geo. J. Goubeaud.

- "Syrup as a Food for Horses," by Dr. Geo. H. Berns.
(Title to be announced later), by Dr. G. S. Hopkins.
(Title to be announced later), by Dr. Pierre A. Fish.
"Interstitial Hepatitis in Swine," by Dr. Veranus A. Moore.
"Diagnosis of Anthrax," by Dr. Veranus A. Moore.
"Veterinary Dentistry," by Dr. T. S. Childs.
"The Enforcement of Our Veterinary Laws," by Dr. Wm. Henry Kelly.

Other papers will probably be reported to the Secretary before the day of meeting.

Adjournment at 1 P. M. for lunch. Afternoon session reconvenes at 2 P. M.

Adjournment at 6 P. M. for dinner. Evening session at 8 P. M.

On Wednesday, 10th, at 8 A. M., the Society will meet at the Infirmary of Dr. George H. Berns, 74 Adams Street, to engage in the

SURGICAL CLINIC.

- Ovariotomy in the Mare.
Ovariotomy in the Bitch, median line and flank.
Extirpation of the Membrana Nictitans from the Horse.
Radical Operation for Toe-Crack.
Radical Operation for Quarter-Crack.
Removal of Lateral Cartilage.
Arytenectomy.
Tibio-Peroneal Neurectomy.
Plantar Neurectomy, standing.
Peroneal Tenotomy.
Ophthalmoscopical Demonstrations.
New Method for Suturing Shoe-Boil after Extirpation.
Demonstration of the Use of Stocks.
Fixation of the Knee for Dropped Elbow.
Operations on the Tail.
Dental Operations.
Median Neurectomy.
Castration of the Stallion, standing.
Castration of Cryptorchid (Ridgling).
New Operation for Poll-Evil.

Demonstrations of Casting, and many others, if time will permit.

The operators who have agreed to be on hand are Drs. Geo. H. Berns, Charles E. Clayton, W. L. Williams, E. B. Ackerman, Geo. G. Van Mater, Charles S. Atchison, C. E. Shaw, H.

D. Gill, William F. Doyle, Elishu Hanshew, Joseph R. Hodgson, R. W. McCully, Robert W. Ellis, J. E. Ryder, R. E. Waters.

The Clinic will continue until 3 P. M., when trolley cars will be at the door to convey members and guests to Coney Island, where a shore dinner will be tendered by the New York City members. A light lunch will be served at 12 noon.

The headquarters will be the Hotel Clarendon, Fulton, Til-lary and Washington Streets.

NEWS AND ITEMS.

DR. WALTER LINCOLN BELL (McGill, '98), of Brooklyn, N. Y., was married July 7 to Mrs. Evelyn Van Giesen, also of Brooklyn.

THE unveiling of Pasteur's statue took place on August 3 at his birthplace, Dole, Jura. The occasion was celebrated with extensive decorations and laudatory orations.

DR. JOHN W. CORRIGAN, of Batavia, N. Y. (N. Y. S. V. C.), was in New York the first half of August, taking the New York Board of Health's anti-rabic treatment, he having been bitten in the nose by a supposed rabid dog.

DR. W. L. WILLIAMS, professor of surgery at the New York State Veterinary College, has been on the "complaining list" during the summer, and consequently will not be able to attend the Minneapolis meeting. He will, however, be on hand at Brooklyn, prepared for anything that may come his way.

THE international automobile race from Paris to Vienna, a distance of 871 miles, had 137 starters, 78 of which managed to complete the course. An ambulance followed the vehicles, and it was estimated by the Paris correspondent of the New York *Tribune* that the event was "as disastrous to life and limb as a military battle."

DR. SAMUEL GLASSON, U. S. Army, recently returned from the Philippines, on sick leave, visited the REVIEW office during August. He reported that while *en route* from Manila to the San Francisco hospital, he was handsomely entertained at Honolulu by Dr. W. T. Monsarrat. An interesting account of the doctor's experiences in the orient is to be found in this number of the REVIEW.

WILLIAM M. BEARDSHEAR, A. M., LL.D., President of the Iowa State Agricultural College at Ames, died the early part of August and the State of Iowa lost one of its most prominent

and useful men. During the eleven years of his administration the college increased more than three-fold in number of students and teaching force. In equipment it has grown from a few poor buildings to its present large proportions, and the recent legislative appropriations will place it among the best in the country. In the past few years he has brought the veterinary department to a prominent position among educational institutions, and his loss will be greatly felt by his fellow-workers, and the cause of industrial education has lost one of its great leaders.

THE FINAL OVERTHROW OF KOCH'S THEORY RESPECTING THE NON-COMMUNICABILITY OF BOVINE TUBERCULOSIS TO HUMAN BEINGS.—Koch's labored effort to prove that bovine tuberculosis cannot be communicated to human beings was practically wholly based upon the experiments from which he claimed to have demonstrated that human tuberculosis could not be communicated to animals of the bovine species. As has been so often pointed out, the facts which he presented were not conclusive, if proved; for it might easily be possible that bovine tuberculosis could be communicated to human beings even though human tuberculosis could not be communicated to calves; but Arloing, a recognized authority, has come forward (*Bulletin de l'Académie de Médecine, and Presse Médicale*) with a carefully studied series of observations which show conclusively that human tuberculosis may be communicated to various species of lower animals. In his experiments, he produced tuberculosis in twenty-three animals, all of which were pronounced by Koch to be non-tubercularizable by infection from human beings. Of these animals, there were three calves, six sheep, ten goats, and three donkeys. Arloing further shows by careful analysis of the observations of Koch, that seven out of thirty-four animals inoculated by him with human virus were actually infected. Every sanitarian will be glad to welcome this thoroughgoing exposure of Koch's most ill-advised and mischievous announcement.—(*Modern Medicine*.)

NEW AND OLD HAY AND OATS.—Several correspondents have of late inquired why it is that veterinarians and successful horsemen generally advocate the use of old oats and hay for horses at this time of the year. One inquirer, for instance, states that "it is well known that there is more nourishment in new oats and new hay than in old," and that it seems to him "the sheerest folly not to take advantage of that fact." We are not so certain that it is a fact after all. Indeed we are inclined to

think that the statement quoted is not true. In any case, taking up the hay first, there are thousands of the eggs of insects and parasites still alive on the stems and leaves of new hay that when taken into the stomach of the horse develop and cause trouble of many sorts. Then new hay just made must go through a variety of sweating or fermenting processes, and surely no one will maintain in the face of what is generally known that such changes in food composition can be good for the digestion of any animal. In the case of new oats the sweating process cuts a most important figure, and the amount of water that is in the grain when new carries no nutriment with it at all. The sweating and subsequent drying of grain takes from it much that is injurious to the equine stomach, and what is more, the food substances in all grain are in a more highly concentrated form owing to the absence of water. Many of the most valuable horses on earth never get a bite either of new hay or oats, and among those are the horses that are required to race, to make their supremest efforts week after week. With regard to other grains, such as rye and barley and wheat, barley alone can be considered as at all a desirable horse food. Rye and wheat have been fed with a measure of success, more especially the latter, as exploited in this journal by Prof. Henry and others, but they are dangerous for the novice to try. Some rye is better than no grain at all for horses, it is true, but it will prove costly provender if it is not fed with the utmost caution in its new state. Too much caution can hardly be exercised in changing from the old to the new crop, and in the case of both hay and oats it is always well to make the transition as gradual as possible by mixing the old with the new and gradually increasing the proportions of the new from time to time until the horses have become thoroughly accustomed to it.—(*Breeder's Gazette.*)

THE PENALTY OF NEGLECTING VETERINARY MEDICINE.—We have often urged upon our readers the precept that it was not wise for practitioners of medicine to fail to inform themselves to some extent in comparative pathology. What comes of such neglect? Ignorance of the connection between disease in the lower animals and disease in man, ignorance even of the existence among human beings of certain malignant diseases of domestic animals. The veterinarians properly insist upon the importance of their work from the point of view of the public health, but seldom so cogently as was recently done by W. H. Dalrymple, M.R.C.V.S., of the Louisiana State University, in a

paper entitled, "The Value of Coöperation in the Sanitary Control of Our Periodic Epizoötics of Anthrax," read before the Louisiana State Medical Society in June, and published in the August number of the *New Orleans Medical and Surgical Journal*. Those of us—and we are not a few—who have seen occasional cases of malignant pustule in the human subject do not need to be told that Surgeon-General Sternberg was in error when he stated in his "Text-Book of Bacteriology" that anthrax did not prevail in the United States, unless, indeed, he used the word "prevail" in a sense that would suggest an ever-present pestilence; but few of us probably are aware of the amount of devastation wrought by the disease in Louisiana and Mississippi. A striking picture of the facts is given by Professor Dalrymple, and his recommendations for restricting outbreaks are such as must commend themselves to those who reflect upon the situation. But it is not to these features of his very interesting communication that we shall now direct attention, but to the eloquent plea that he makes for comparative pathology as a subject of thought with the medical profession in general. He says he knows of country practitioners who have turned their veterinary knowledge to account in times of anthrax epizoötics by informing the people of their danger and inculcating such sanitary precautions as the complete destruction of the carcasses of animals that have succumbed to the disease and the practice of thorough disinfection; and the results have been brilliant. "But," he adds, "I have heard of others who, on being asked for information, because the victim of anthrax happened to be a mule or a cow, explained with an air of wounded dignity, 'I'm no mule or cow doctor, and don't know anything about it!'" The dignity that needs to be so safeguarded must, we should say, be made of very unsubstantial stuff. The result of such a reply, says the author, has often been that some illiterate person, without any sanitary knowledge whatever, has been called in, and the contagion been permitted to spread broadcast. It does not, he aptly says, indicate the spirit of the true pathologist to disclaim all interest in the diseases of the lower animals, for he "looks upon disease as such, and does not consider the subject that accidentally has become the victim of it." And he is quite justified in deprecating forgetfulness of the fact that "the magnificent strides medical science has taken and the exalted pinnacle to which it has attained in recent years" have been largely owing to the efforts of the veterinarians.—(*New York Medical Journal*, Aug. 9.)

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Journal

AMERICAN VETERINARY REVIEW.

OCTOBER, 1902.

All communications for publication or in reference thereto should be addressed to Prof. Roscoe R. Bell, Seventh Ave. & Union St., Borough of Brooklyn, New York City.

EDITORIAL.

EUROPEAN CHRONICLES.

INTRAVENOUS INJECTIONS OF ANTI-RABIC VIRUS.—Almost ever since the discovery and the application of the treatment of Pasteur against hydrophobia, researches have been made to shorten the length of the treatment and to find a method more intense, so as to avoid the rare failures which occur now and then, failures which, leaving aside the cases where the immunity fails to appear on account of individual peculiarities, are explained by the slowness with which a refractory condition develops in the organism; twenty days of treatment are required for immunity to appear and more than fifteen are necessary for the effects of the successive inoculations to be produced. If before that time the rabid virus reaches the central nervous system, the treatment fails.

To accelerate the process of immunization is then of the utmost importance.

Among the attempts which were made to realize this object, intravascular injections have been tried.

Is the introduction of virus into the blood harmless? Pasteur, at first, observed that injection in the blood gave rabies just as well as intracranial inoculation. But later he found that if introduced in very small quantity the virus produced no disease, but failed also in granting any immunizing power.

Galtier has also shown that the inoculation of saliva from rabid animals into the veins of the sheep and horse does not develop rabies, but that it neither seems to confer immunity.

Roux and Nocard by numerous experiments have confirmed the observations of their predecessors, and yet, they have demonstrated that the intravenous injection of pure rabid virus, made in horses, cattle or sheep, twenty-four hours after the intra-ocular inoculation of a virulent cord, is sufficient to prevent the development of rabies.

Many have been the researches which have been made, and in the *Annales de l'Institut Pasteur* I find a report of a long series of experiments made in that direction by Dr. V. Krasmitski, of the Bacteriological Institute of Kiew, which seems to have allowed the question to go a few steps forward, and which after all may bring on the practical result so desired.

From the experiments of the Professor it is proved (1) that "intravenous injections of rabid virus are not dangerous under the conditions that the virus be in a filtrated and diluted emulsion, heated at 37° and introduced very slowly. If these conditions are carried out, possibility of embolies are avoided, and no harm will follow the injections; (2) by intravenous injections animals are made refractory to rabies more rapidly, and a more solid immunity is obtained than by the other modes of vaccination—in the rabbit, even after intracranial inoculation, it has protected him and prevented the development of the disease; (3) rabid nervous substance, made not virulent by any attenuating agent, has no immunizing action; scarcely may it exercise a vaccinating power in rendering the organism less sensible to the following introduction of a reënforced virus."

As an evidence of at least the harmless effects of intravenous injections, Dr. Krasmitski relates the fact that during last year in 70 cases of persons bitten by rabid dogs and of excessive severity, this treatment was tried at the Institute of Kief, that they have been followed by no complications, and that the results were very encouraging.

It must not be supposed, however, that only bacteriologists can solve the question. It is certain that much can be suggested by such experiments as the above, but the practical veterinarian is on his side also searching.

The first practical application was that which has been made and recorded by a veterinarian, Mr. Moncet, who reported in the *Revue Vétérinaire* the history of three cows which had been bitten by a mad dog. Two of the cows received in the veins, ninety-four and seventy-nine hours after being bitten, five cubic centimeters of an emulsion made with the bulb of the dog that had bitten them; the third cow, which was only suspected, received the treatment only one hundred and eighteen hours after receiving the bites. The three animals remained healthy and did not contract the disease.

Successful in these three animals, this treatment failed with Mr. Rabieaux, who resorted to it in a donkey.

Since, new attempts have been made by another veterinarian, Mr. Conte. With him, however, the results are different. A horse treated five days after injury lived for six months, when he was said to have died with paraplegic symptoms. Another manifested rabies only seventy-seven days after treatment. Another, in which the treatment was applied only one hundred and thirty-two hours after the bite, lived two hundred days after the first vaccination. With a fourth the horse lived seventy-one days after the injury, and in a fifth no symptoms were manifested until one hundred and forty-five days after being bitten.

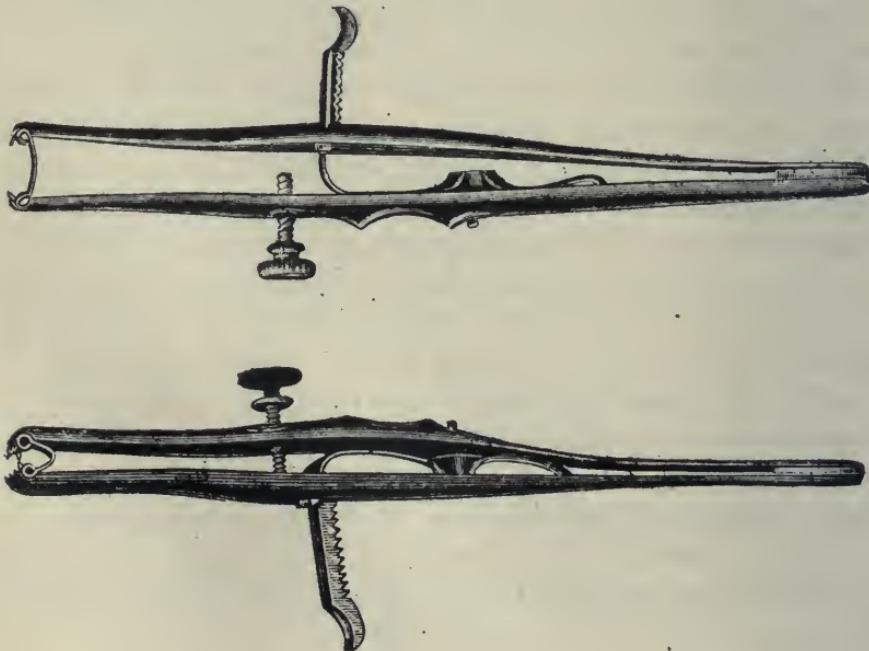
Although the treatment seems to have failed in all these cases, there is a very important point to notice, viz., that for three of them the time required for the appearance of the disease has been unusually long—there has been a continuation of apparent health far superior to the period of incubation of rabies in solipeds, which varies between fifteen and sixty days. Powerless to prevent the infection, has the treatment arrested its apparition, or increased the resistance of the animal? Is a gradual increase of the quantity of virus to inject necessary? These are questions which remain to be solved.

In his experiments the technic followed by Mr. Conte was as follows: The skin of the jugular was soaped, shaved, disinfected with solution of sublimate ($\frac{1}{1000}$), the inoculation was made with a syringe of double canula, and five cubic centimeters of virulent emulsion was used. This was made with pieces of bulb crushed, filtrated through very thin cloth. A second injection was made 24 hours after in the other jugular. The animals were kept at perfect rest for a month after.

* * *

A NEW SUTURE.—Many are the objections made against sutures—their possibility of cutting, their getting loose, their irritating effects, etc., etc.—and to overcome them many modifications have been resorted to. The thread, the silk, the hairs, the catgut, the metallic sutures, etc., have been tried and have found their proper and individual application,—and yet it does not seem that perfection has been reached. Of course, surgeons are searching and experimenting.

At the International Congress of Chirurgie, held in Paris, a new system of suture was presented to secure the union of



cutaneous wounds, which deserves attention. Dr. Michel, who presented it, has obtained with it excellent results. It consists in the application of a number of metallic agrafes (hooks) similar to those that we veterinarians have been using for years in the treatment of toe-and quarter-cracks,—the Vachette clasp, somewhat modified. These agrafes are made of small metallic bands one centimeter long and $\frac{1}{4}$ of a centimeter wide, with sharp extremities, which are applied and closed tight with special forceps, which have already received many modifications. The little drawing shows the forceps of Bayer with the agrafe as it is to be applied and when in place.

Prof. Bayer has already recorded cases of the use he has made of those sutures in the treatment of two abscesses of the mastoido-humeralis and where he obtained very good results.

In the *Clinica Veterinaria*, I have followed the records of numerous experiments made at the clinics of the Royal Veterinary School of Milan, which are reported by Dr. Domenico Bernardini, and the results are so satisfactory that there can be no doubt of this mode of sutures taking the place of many, if not all, of those now in use. Indeed, sixteen cases are recorded of cutaneous sutures made for various solutions of continuity and in all the agrafes have given complete satisfaction, in holding the parts well secured, in not interfering with cicatrization, etc. The cases are: sutures of the skin for wound after the extirpation of a large splint; for a large lacerated wound of the back of a hind leg, over the tendon; to hold the incision made to reduce an inguinal herina in a pig and in a dog; to close an abscess of the anterior border of the neck; to suture wound of planter neurotomy; in a case of amputation of the penis to secure the skin to the urethra; after mastoido-humeralis abscess; in two cases of entropion in dogs; in one of enormous growth of the axilla; after amputation of the ear in dog to hold the cutaneous edges well in contact; in a case of fistulae of the supra-orbital region of a horse; after umbilical hernia in two dogs; after median neurotomy; after extraction of the mammae in the slut.

It is claimed that the agrafes can be sterilized as well as any other suture, that they can be used several times if properly removed after their work is done, and that their cost is so small that even in that point, there is advantage to use them in veterinary practice instead of others.

* * *

THE "EMERGENCY REPORT ON SURRA."—I cannot close this chronicle, but must postpone to my next other subjects of interest to keep a little room for a few words on an American publication which I have just been enjoying. What business have I, in a European chronicle, to consider American subjects? Of the right that a chronicler has to take his material wherever he finds it. Anyhow, for once, my chronicle will be international instead of strictly European.

Have any of our friends read the late issue from the Bureau of Animal Industry, "Emergency Report on Surra?" Good for those who have had the opportunity and have been wise enough not to let it go by. But let every one of those who have not yet seen it, get it and read it carefully. Dr. Salmon and Dr. Stiles deserve well of the profession for their new issue, for in it the veterinarian will find a gathering of all that has been published of the disease "surra," and will gain an excellent knowledge of its pathology. They deserve well from the sanitary veterinarians, and also from army officers, who can now become familiar with a disease which would possibly enter the United States if the ever vigilant and constant watchful Chief Salmon was not there to stop it.

It is not here my plan to review "Emergency." I might say that in it surra is treated in the most thorough manner, etiology, symptoms, pathology, complications, prevention, etc., etc. I might add that in that pamphlet, nagana, or tsetse-fly disease, Mal de Caderas and tripanosomiosis of rats and bandicoots are also presented to the reader. But I think the best I can say is—write to our colleague at Washington. I am sure that, with his usual amiability, he will send it to the applicant, who, without doubt, will enjoy the treat. Try it! A. L.

THE SEPTEMBER VETERINARY CONVENTIONS.

Veterinarians have resumed their accustomed labors, after a splendid season of profitable relaxation from the treadmill of routine practice, refreshed in mind and body, stronger in their capacity to serve the cause which demands their greatest efforts, their brightest thoughts, their keenest reasoning, and their best physical state. And what a record they have left for the archives of our associational life. The convention halls were filled as never before, and by men who were there for what they could learn and contribute to the science of veterinary and comparative medicine. That was their serious work, and that this work could occur amidst pleasant surroundings, that social pleasures and innocent amusements could be charmingly intermingled with their scientific labors, but add to the quality of the latter. So it proved with the conventions just passed. Those who contributed the strongest to the programmes entered into the diversions with the heartiest zest, for it is a truisim that the hardier the tree the better its fruit.

The REVIEW promised its readers in September that it would present in its October number as full accounts of these great gatherings as its pages would hold, and we believe that a perusal of this issue will show that it has more than kept faith with them, for it has added many pages to its regular quota in its efforts to tell the stories of the National and State gatherings in different parts of the country. But even with the great amount of space thus afforded, they must remain half-told tales. It will require several issues to place before our readers all the precious material which we have secured, for it appeared that all were anxious that their contributions should appear within the REVIEW's cover. More evidence was exhibited to us of the influence which this journal is exerting on the profession of this country to-day than had impressed itself before. Veterinarians from all quarters of the country, and representing every phase of professional life, spoke of it in the most affectionate terms and with every evidence of their esteem for its efforts in behalf of their profession. We assure all that their

kind words and loyal support is deeply appreciated, and will have the effect of stimulating us to stronger endeavors to merit their confidence.

The American Veterinary Medical Association, which met in Minneapolis, Sept. 2 to 5, was the largest in point of attendance and in character of deliberations of any that have preceded it in the thirty-nine years of its existence. A large number of pages are given elsewhere to detailing its deliberations, and as many of the documents presented as can be crowded into this number, while others will follow as rapidly as possible.

The revival of interest in association work in New York State which started in at Ithaca in 1900, and increased in 1901, was more than sustained at the State Society meeting at Brooklyn, on the 9th and 10th. Not all of the papers announced, the authors of which were on hand, could be presented, the time of the session having been consumed in the discussion of those that were read, so intense was the interest of the members in the subjects treated of. But the REVIEW will supply as much of this deficiency as possible by publishing those that were omitted. The members again emphasized their conviction as to the educational value of clinics as a help to them, for they were present in even greater numbers at this section of the programme. Nor is it necessary that the clinic shall be surgical, for when subjects of doubtful diagnosis—whether it be constitutional disease, obscure lameness, or rare conditions—their interest was just as manifest. The story of this great meeting will be found elsewhere.

Missouri held her State convention a little earlier than September, but it belongs to the autumnal State gatherings, and Secretary Kaupp gives veterinary readers a good idea of all that was done at the meeting on the 18th and 19th of August in this number.

We regret that we have not in hand the record of the Pennsylvania State meeting, but we understand that it was entirely successful, and hope to be able to print an account of the proceedings in the next issue.

Altogether, the profession of the country is to be congratulated on the extent and character of association work for 1902, and the REVIEW desires to tender its sincere felicitations.

APPRECIATED RECOGNITION.

In the "News and Items" department of the September REVIEW there was reproduced an editorial from the New York *Medical Journal*, of August 9, entitled, "The Penalty of Neglecting Veterinary Medicine," which was based upon a paper presented by Dr. W. H. Dalrymple at the annual meeting of the Louisiana State Medical Society in June last. The paper in question was on the value of coöperation in the sanitary control of the periodic epizoötics of anthrax which occur in Louisiana, and its main object was to draw the attention of members of the medical profession in that State, more particularly those practicing in districts in which the disease most frequently occurred, to the importance of coöperative action in a work that not only affected the pockets of the owners of live stock, but was in the interest of the public health as well, especially where members of the veterinary profession were not in sufficient numbers to successfully cope with the situation. The appeal for coöperation which Dr. Dalrymple made, was not, however, in favor of the medical man usurping the position of the veterinarian in work which properly belongs to the latter, but for his assistance and influence in the endeavor to impress upon clients the absolute necessity for the adoption of strict sanitary measures.

Incidentally, Dr. Dalrymple drew attention to the fact, that the study of pathology was not confined to disease in the human family only, but that it was similar, whether occurring in man, the lower animals, or even plants; and he stated that the rapid strides medical science had made, and the exalted pinnacle to which it had attained in recent years, had been made possible largely through the efforts of workers in the field of comparative medicine. This the New York *Medical Journal* heartily indorsed, and made the point that it would enhance the value of the work of the medical profession if its members were more

familiar with veterinary medicine; or, in other words, knew more about the diseases of the lower animals that are communicable to the human subject.

We appreciate the editorial comment by the New York *Medical Journal* as a compliment to the veterinary profession, and a recognition by such an eminent authority of the importance of the position we hold in the great field of medical science.

PEMPHIGUS FOLIACEUS.—Dr. F. W. Culver, of Longmont, Col., writes under date of Aug. 24: "I read with great interest the article in the July REVIEW by Dr. F. E. Anderson on 'pemphigus foliaceus.' I enclose a clipping taken from the *Denver Republican* of Aug. 24." The "clipping" referred to is as follows: "New York, Aug. 23.—Rudolph Fliender of New Brunswick, N. J., is dead, after a lingering illness, from a rare disease of the skin known to scientists as pemphagus vulgaris. No other case of the disease has ever been known in the United States it is asserted. Fliender's skin became as if scalded and his nurses had to swathe his entire body in cotton. Specialists who studied the case with great interest could do nothing to relieve him and he died from exhaustion."

A FAMILY OF RUMINANTS.—Dr. L. R. Müller (*Münchener medicinische Wochenschrift*, August 5th) reports the cases of a father and two sons who were ruminants. In from fifteen to thirty minutes after a meal, the ingested food reappeared, in equally large portions, in the mouth. This was rechewed and reswallowed, and in from three to four minutes another portion came back into the mouth to go through a similar process. This continued anywhere from one-half an hour to an hour after a meal, and was accompanied by a renewal of pleasant taste and by a certain desire to continue chewing the regurgitated food. If the rumination was interrupted, an uncomfortable feeling in the stomach developed. The three men were in perfect health, had no complaints of any kind, and there was abundant evidence that the intestinal digestion was perfect. The father died of carcinoma of the stomach. The autopsy disclosed an hour glass contraction, the cardia and the oesophagus were so dilated that they admitted three fingers easily. Müller describes as the possible causes of this anomaly digestive peculiarities and atavism. The act, however, was in all three patients an involuntary, automatic one.

ORIGINAL ARTICLES.

CONTRIBUTION TO THE STUDY OF CANINE PIROPLASMOSE.

BY MM. NOCARD, OF ALFORT, AND MOTAS, OF BUCHAREST.

TRANSLATED BY A. LIAUTARD, M. D., V. M.*

With Mr. Almy, one of us published last year an observation of haemoglobinuria of a dog, that minute study revealed to be due to the presence of haematozoa (piroplasma) analogous to those of Texas fever; blood of this dog, injected in the jugular of another healthy animal of same species, had given him the disease with all the characters presented by the first. This observation was the starting point of the experimental researches which form the object of this paper. It was not, however, the only one; since we have been able to study at the Alfort clinic, seven similar cases—five in the service of Prof. Almy, who has already published them; two in the clinics of Prof. Cadiot, still unrecorded.

Canine piroplasmose is not altogether rare in France, and the similarity of the evolution of the natural with the experimental disease gives to this paper a real practical interest.

The disease seems to exist also in Italy. Piana and Galli-Valerio have described and printed the parasite that they have observed in two dogs, one icteric, the other anaemic; they noticed its analogy to that of Texas fever; but it does not appear that these authors pushed their researches further, as they have published nothing since.

Celli reports that in dogs from Lombardy, observed in the Roman country, haematozoa similar to those described by Piana and Galli-Valerio had been observed.

The disease seems more frequent in Africa. R. Koch says that he observed it several times during his stay in East Africa. Marchoux had already seen it in Senegal, and he presented to

* From the *Annales de l'Institut Pasteur.*

the Société de Biologie drawings of piroplasmas seen in the blood of eleven native dogs, which, nevertheless, seemed in perfect health. It is known at the Cape under the names of "biliary fever," "malaric fever," but principally as "malignant jaundice."

Duncan Hutchéon, in a short note, gave a good description of it in 1899, where he insists on its parasitic nature, already mentioned by Dr. Carrington Purdis, and also upon its transmissibility by inoculation of the parasitic blood, which he obtained with Spreul.

A more extensive work by W. Robertson confirms and completes to the experimental and clinical points of view the indications of Duncan Hutchéon.

Finally, a very interesting paper of Lounsbury, resumed by Robertson in his work, shows that "malignant jaundice" of dogs is caused by a piroplasma analogous to that of Texas fever; that, like it, it is propagated by the intermediary of a special ixode, which Prof. Neumann, of Toulouse, has classified as the "*Hæmaphysalis leachi*" (Audouin).

CLINICAL STUDY OF THE DISEASE.

To the clinical point of view, canine piroplasmose presents two very distinct forms: In one, the evolution is rapid and almost always followed by death; in the other it is slow, and ordinarily ends in recovery.

(1) *Acute Form.*—The disease is first manifested by loss of appetite and dullness. The dog lies in one corner, indifferent to all surroundings, listless to the calls of his master. From this moment he is feverish; his temperature rises above 40° C., and remains high for two or three days; it then drops suddenly to below normal—perhaps down to 33° ; at times, but rarely, the thermic curvature is not so regular; the temperature, always elevated, shows great oscillations, and the dropping occurs slowly and gradually; in very young dogs, which succumb very rapidly to the infection, the hypothermia of the start is often missing, and as soon as the apparition of the intraglobular parasites takes place, the temperature goes down until death.

During the whole duration of the disease, anorexia is complete; the nose is dry and warm; the animal remains lying down, crouched upon himself; the eye dull; he is listless to all excitement.

The mucous membranes (eye and mouth), at first pale, become little by little purplish, then slightly icteric (as soon as the hypothermia has occurred).

But ictere is not constant, and its intensity varies much. Out of 63 cases with rapid development, we have observed it 30 times; in the other 33 cases the mucous membranes remained more or less pale, with sometimes a bluish tint, slightly marked.

When there is ictere, the sclerotics and the teguments are affected like the mucous membranes. The pulse is quick (120-160 a minute), it is small, filiform, sometimes intermittent. The respiration is accelerated (36-48), difficult, gasping, and often, in young animals, accompanied with groans.

In some rare cases, there is vomiting, of greenish mucous matters, sometimes incoercible.

Exploration of the chest reveals nothing abnormal.

Palpation of the abdomen reveals sometimes hypertrophy of the spleen; this, however, is not the rule.

General sensibility is abolished; the patients respond to no excitation, and seem indifferent to the operations they are submitted to.

From the start, walking is stiff, difficult, wabbling on the hind quarters; then paresia occurs; the dog rises only with difficulty; if made to walk, often falls down and finally, during the hypothermic period, paraplegia is almost complete. Towards death, the animal falls into coma; he passes away quietly without struggles.

Once (in dog No. 29), we observed true tetaniform convulsions, and the animal died in opisthotonus, with contraction of all the muscles.

From the apparition of the first symptoms, even when no parasite can be detected, urine is albuminous and remains such

to the end ; the quantity of albumin varying with the number of parasites.

It is often rosy, dark red, or black as coffee ; this coloration is not due to the presence of blood in nature, as red corpuscles are never found in the urine ; there is hæmoglobinuria, but no hæmaturia ; the hæmatospectroscope of Henocque shows in it the two bands which characterize oxy-hæmoglobin. The quantity of hæmoglobin may reach as far as $3\frac{1}{2}$ per cent.

The hæmoglobinuric crisis begins ordinarily a little after the apparition of the endoglobular parasites ; in excessively acute cases, especially in very young dogs, it lasts until death ; at the post-mortem the bladder has been found distended with dark urine, the color of prune-juice.

When the disease lasts a little longer, the hæmoglobinuria disappears and the urine returns to a dark yellow color, at times clearly icteric.

Hæmoglobinuria is not constant ; and of 6 cases observed by Nocard and Almy, only three had it ; but it is sometimes very fugacious and it may have passed unobserved.

Out of 63 dogs which died at our hands after inoculation, 43 had hæmoglobinuria, more or less severe and of varying duration.

The reactives of Gmelin and of Craft show in the urine the presence of biliary pigment, especially in cases accompanied with ictere or hæmoglobinuria ; the reaction of urine is acid, only once did we find it alkaline and in two other cases neutral ; sometimes, although rarely, there is polyuria.

The blood is deeply modified ; it is pale as if it has been mixed with water ; its coagulation is slower, the clot being softer and lighter in color than ordinarily ; the serum is of a dark red color ; this coloration varies, but increases rapidly at times ; it seems that the fragility of the corpuscles, already noticeable in the healthy dog, increases considerably under the influence of the disease. In sub-acute cases, when the hæmoglobinuric crisis is succeeded by ictere, the exuded serum of the clot has sometimes a very deep yellow tint with perhaps a greenish reflection.

When blood has been collected in a large test tube, at the bottom of which a few drops of a solution of citrate of potash has been placed to prevent the coagulation, the corpuscles gather to the bottom of the glass and form a mass with a dark purplish color, which in height scarcely measures the $\frac{1}{5}$, $\frac{1}{10}$ and some $\frac{1}{15}$ of the height of the plasma.

The numeration of the corpuscles reveals the enormous globular destruction that has taken place. In healthy dogs, the number of haematics varies between 6,500,000 and 7,000,000 (Malasser's method). From the apparition of the first symptoms, the number of corpuscles diminishes slowly but regularly; then, at the haemoglobinuric crisis, it suddenly drops down to 2,000,000, and even below. The proportion of haemoglobin diminishes likewise from 12-13% to 6, 4 and 3½%.

Differing from the haematics, the white corpuscles increase in number: From 7000 to 8000 are counted in a healthy dog; in sick individuals the number is doubled, tripled or quadrupled; we have counted as many as 40,000.

The increase occurs almost exclusively in the polynuclear; it is still more marked in the slow forms of the disease.

The alteration of the blood does not consist only in the excessive diminution of the number of haematics: When a preparation of blood, fresh or colored after fixation, is examined, one is surprised at the various sizes of the red corpuscles; some are larger by one-third, one-half or two-thirds of the normal diameter; they seem also paler and do not take coloring so deeply; on colored preparations an abnormal number of nucleated globules are also seen. These globular alterations are still more marked in slow forms of the disease.

The acute form of the malady ends ordinarily in death from the third to the tenth day from the apparition of the first symptoms.

(2) *Slow Form.*—This is especially indicated by deep anaemia, muscular weakness, sometimes fever, rarely by slight haemoglobinuria or ictere.

When it exists, fever is observed only at the outset of the

infection ; it is often slight and lasts scarcely for two or three days ; it is often absent ; most commonly also it is unobserved, nothing serious calling the attention of the owner ; it is generally noticed only in the experimental disease. As in the acute form, it occurs early, earlier when the animal has been inoculated through the veins than when under the skin ; the temperature rarely goes beyond 40°C., remains there for 36 or 48 hours, then returns to normal ; once, however, we have observed a true *quarte* fever in one of our inoculated animals. Most often, fever is insignificant or completely missing.

Anæmia is the most constant symptom of this form of the disease. It is accused by the progressive palor of the mucous membranes, the listlessness of the animals, who prefer to remain lying down, indifferent to the surroundings ; diminution in the appetite, loss of flesh, general weakness, dryness of the skin, staring coat. It lasts a long time, from three to six weeks ; then, little by little, appetite and liveliness return, the mucous membranes become colored, the animal recuperates its strength ; recovery is complete between six weeks and two or three months.

If the urine is examined at the onset of the disease, ordinarily a little albumin is found ; this lasts for fifteen to twenty days.

Hæmoglobinuria is very rare ; when it exists, it is only for one or two days ; most often the urine remains yellow and clear ; however, at times it is sedimentous. The reaction is acid ; once only we have found it neutral ; the urine contained at the same time much sugar ; but it is probable that this condition of the urine had no connection with the disease we are considering.

Examination of the blood gives the explanation of the progressive anæmia : The number of red corpuscles diminishes little by little until they are below 2,000,000 ; in one case there were only 1,200,000 in one cubic millimeter. The hypoglobulin is accused especially after the passing off of the fever, and it increases again after the parasites seem to have disappeared or when they are very rare ; after twenty-five or thirty days, the

number of corpuscles increases little by little, but it is not before two or three months that the normal number has returned.

The loss of haemoglobin is much less accused than in the severe form, when it may drop to $3\frac{1}{2}\%$; in one case where the number of corpuscles was only 2,760,000 there still was $9\frac{1}{2}\%$ of haemoglobin.

On colored preparations, still better than in the severe form, great differences are observed in the dimensions and coloration of the haemastics: some are two or three times the normal diameter and color less easily; many nucleated haemastics are also observed, especially at the beginning of the hypoglobulin.

The number of the white corpuscles is always much increased, from 15 to 30,000; we have counted 54,000 in one case. Hyperleucocytosis exists equally in the mono and the polyneuclears. It is frequent to observe, in the few days following the febrile period (when it exists) leucocytes filled with red corpuscles containing parasites; this phagocytosis, very rare in the severe form of the disease, is exclusively mononeuclear.

As the recovery advances, the number of red corpuscles increases, that of the blood diminishes, and only rare nucleated red corpuscles are found; in opposition numerous masses of haematoblasts are observed.

THE PARASITE.

Whatever the form of the disease, examination of the blood reveals the presence of endoglobular haematozoa, very closely related to that which causes Texas fever.

Very abundant in the severe form of the disease, it is sometimes in the slow form very difficult to bring it out; yet in examining systematically for several days, if necessary, the blood of the capillary circulation, one may succeed in finding it.

To the point of view of the diagnosis, searching of the parasite is very simple: upon a very clean slide, a very small drop of blood, from a prick of the ear, is placed upon it and spread as a very thin layer with another slide which is pressed on it by its smooth border passed over the first slide; the preparation is then fixed with alcohol-ether or absolute alcohol; and when

the fixator is entirely and spontaneously evaporated, a few drops of phenicated thionine of Niccoli are dropped on the surface of the slide. If the thionine is good, a contact of thirty seconds is sufficient; the slide is washed, dried and examined with a magnifying power of from 5 to 600 diameters. The haemastics are colored in pale green; the parasites are seen under the form of small bodies indicated by a very clean outside border, strongly colored in blue, with a central portion colorless or with a very pale blue.

Most of the infected corpuscles contain but one parasite, big and round; but others also in the rapid form contain 2, 4, 6, 8, 12, and even 16 parasites; then they are smaller, irregular in their outlines, polyedrical, or at times, though rarely, piriform.

The number of diseased corpuscles varies very much, according to the form of the disease, and in each form according to the period of development. In acute form, during the fever or immediately after, with or without haemoglobinuric crisis, the parasites are in large quantity. In slow forms, they are so few that they may escape the most minute research.

In these difficult cases, the examination of the slide must be on the point where the spread layer of the blood ends. It is there that the chances are greater to discover the parasites if the blood contains any. It is therefore a wise precaution to have but a very small drop of blood on the slide, so that in spreading it does not go beyond the extremity of the glass.

If one wishes to study the structure and the evolution of the parasite, more complicated modes of coloration must be resorted to, and the examination of fresh blood must be added to it.

The methods of coloration of Romanowski, Vasielewski and especially that of Laveran, give good results; but their manipulations are delicate and often they leave on the surface of the preparation deposits of coloring matter which interfere with the clearness of the preparation and bring confusion.

After many trials, we have adopted the following, which is but a modification of that of Laveran:

The slides, prepared as I have said, are fixed by immersion of about an hour in absolute alcohol ; after complete and spontaneous evaporation of the alcohol they are placed, the impregnated side facing downwards, on the surface of a thin layer of coloring matter made as follows :

Hoechst's Eosine (Mark Extra B. U.) solution at 0.5

per 1000

10 c.c.

Phenicated Theonine of Nicolli

1 c.c.

Borrel's blue to the oxid of silver, saturated solution 2 drops.

These three solutions must be filtrated before being mixed, but the mixture must not.

The preparations placed on the surface of the coloring fluid (without the face of the slides touching the bottom of the recipient) are left in it for four hours at least—there is no harm in leaving them twelve to 24 hours.

After that time, they are well washed with running water ; then treated from thirty to sixty seconds with the orange-tannin of Grubler, which is poured on them drop by drop. They are again washed, dried and then mounted. The action of the orange-tannin is important, not only because it clearly differentiates the hæmatic from the parasite which it contains, but also because it seems to loosen and facilitate the removal of the precipitates of coloring matter which may have deposited on the preparation.

Colored in this way, preparations facilitate much the study of the parasite : while its protoplasm is colored in pale blue, the nucleus has a very strong red carmine tint ; the whole coming out forcibly on the orange coloration of the red corpuscles.

The same method of coloration gives excellent results for the study of tissues ; sections (made after fixing on acid sublimate, hardened with the series of alcohols and enveloped in paraffine) are glued on plate, treated for fifteen or twenty minutes in the above-named coloring mixture, washed under running water, exposed from ten to fifteen seconds to the action of orange-tannin, washed again, dehydrated with absolute alcohol, cleared

with toluen or xytol and mounted on balsam. Thus prepared the preparations have an admirable clearness.

The method can also be applied for the study of trypanosomes (of rats, of dourine, or of nagana); the results are always excellent.

The examination of the fresh blood allows the consideration of the changes of forms of the parasite under the influence of the amœboid movements which it performs within the corpuscles. This examination gives results truly useful only at the febrile period, or immediately after the dropping of the temperature; it is only at that time that the parasites, then numerous, are moving, and that they multiply with activity.

To be beneficial, the examination must be made in the hot chamber and on a mixture $\alpha\alpha$ of blood and aqueous humor or of physiological fluid, deposited in hanging drops over the inferior face of a thin slide resting over a hollowed one.

The use of dry objective (No. 9 of Verick) without Abbé lightening is preferable; but objectives with homogeneous immersion and lightening of Abbé can also be used, providing strong diaphragm is resorted to.

The infected corpuscles are bigger and paler than the others; the hæmatozoa appears as a small rounded mass with its outlines very dark and its centre refringent.

In the hot chamber, the parasite is easily seen changing form; its outlines become irregular; prolongations are formed running in threads towards the periphery of the corpuscles, then contracting to unite again to the central mass of the parasite; quite often two or three of these pseudopodes are seen proceeding from the parasite; these motions are sometimes sufficiently rapid to make the infected corpuscle roll upon itself.

In other cases, when the parasite seems contracted into a globular mass, immobile in the centre of the corpuscle, very refringent and very little bodies are seen moving round it. What is their nature and their meaning, we do not know.

Very soon after the febrile period, the hæmatozooæ seem to

lose their amoeboid properties ; they remain immobile in the centre of the infected corpuscle as a rounded mass.

There sometimes exist in the plasma parasites at liberty, either because they have succeeded in escaping from the corpuscle or rather because this has been destroyed. They cannot be easily distinguished, when examining fresh blood, from the cellular *débris* or others which are in suspension in the plasma ; still, they may by diluting the blood in a physiological fluid slightly colored with the blue of methylen, the parasites taking a slight blue tint which differentiate them from the globular protoplasm or its *débris*, which remain colorless.

This method facilitates also the study of the intraglobular parasite, which becomes slightly colored without arresting its motions. These results of the examination of the fresh condition give the explanation of the great variety of forms that the parasite takes in colored preparations.

Generally at the onset of the disease only one parasite is observed in each infected corpuscle ; it is big and rounded ; a little later the corpuscles with parasites are in greater number and contain several parasites.

It is then that piriform haematozoæ can be observed ; agglutinated or not by their tapering extremity ; but the pear shape is always very rare.

Towards the end of the febrile period, or immediately after, the most varied amoeboid forms appear : the haematozoæ are polyedrical, or elongated, or again ramified ; their outlines are roughened with asperities and pseudopodes, sometimes very fine and simulating undulated or twisted flagellata.

In the slow forms, after the febrile period, the parasites, irregularly rounded, seem smaller ; it is rare to find more than one in one corpuscle.

Preparations made immediately after death with the blood of the capillaries of parenchymatous organs, show a larger number of infected corpuscles ; the parasites are also smaller than in the blood of the general circulation and all are almost round.

The size of the hæmatozoa varies not only according to the period of the disease, but also with the age of the sick animal; bigger in very young dogs, when it may fill more than half of the corpuscle surface; in adults it is much smaller, and towards the end of the disease one might believe that it is reduced to its nucleus, round, while the condensed protoplasm forms only a kind of thin surrounding.

The free parasites seem larger than the intraglobulars.

The parasite is constituted by a protoplasmatic mass provided with a nucleus (caryosome or centrosome).

The protoplasmatic matter seems condensed to the periphery, which fixes strongly the coloring matter and resembles an enveloping membrane; the hyaline central part contains no granulation that can be colored by the known methods.

The nucleus presides to the phenomena of multiplication of the parasite; our mode of coloring colors it strongly in red carmine, while it colors the protoplasma in blue.

The form and situation of the nucleus vary very much; during the febrile period, the parasites, round in form, have their nucleus elongated and eccentric; it is closer to the border of the hæmatozoæ on a length equal to about one-fifth of its outline.

In parenchymatous blood, which is always richer in hæmatozoæ than that of the general circulation, the parasite is smaller and assumes principally a round form; the nucleus occupies the centre; and in its immediate vicinity the protoplasm seems rarefied and colors less than at the periphery. This peculiar aspect is likewise observed in the blood of the general circulation taken after death or before death, but kept for several days in a cool place, a cellar.

The multiplication of hæmatozoæ takes place by direct division (bipartition). It is most active during the febrile period. The blood of the general circulation is not good for the study of these phenomena: the division takes place too quick, in an irregular manner, without order, so to speak. On the contrary, in the blood of the capillaries of organs (liver, kidneys, me-

dulla of bones) the division occurs slowly, regularly; all its steps can be followed.

In the normal state, as of "rest", the hæmatozoa is round, and its nucleus also round, is in its centre. When the parasite is about dividing, the nucleus gets elongated, moves away from the centre and towards the periphery of the protoplasmatic mass; then, as the nucleus becomes elongated, it contracts in its centre and soon the division is completed. The two nuclei thus formed then separate from each other running along the contour of the parasite until they reach its opposite poles; at the same time the protoplasm condenses alongside an equatorial line, in such a way that each nucleus seems to occupy the centre of a colorless zone, where the protoplasm becomes more and more rarefied. Soon a notch appears at both extremities of the condensed zone, and little by little, as under the effort of traction in opposite directions made by both nuclei, the notches increase in depth until they are separated only by a thin band of protoplasmatic matter, which still holds the two new parasites united, elongated in pear shape; at that moment the nuclei, which up to then had remained situated on the periphery of the organ, resume their central position in becoming round little by little. Once the separation is completed, the protoplasm resumes the globular, which seems to be the normal state of the parasite.

The new parasites then multiply, according to the same process, into the same corpuscle, which may contain 4, then 8 and later as much as 16 hæmatozoæ.

Thus distended the corpuscle increases in size, then bursts, so to speak, letting free in the plasma the unformed parasites, which thanks to their amœboid motions, go and infect new corpuscles, unless they are absorbed and destroyed by some phagocyte.

It may happen that one of the hæmatozoæ thus formed in the inside of the hæmatoïd does not multiply in its turn or divides only later. This explains why corpuscles may be found containing 3, 6 or 12 parasites. But in the immense majority

of cases, when several parasites exist, they are in even number.

Sometimes hæmatozoæ are found which show on their outlines little rounded projections, colored at the nucleus in red carmine, as if the parasite could also multiply by granulations. This is very rare, and we have seen it only in fresh preparations.

The parasites are always much more numerous in the blood of the capillaries of parenchymatous organs than in the blood of the heart; it is the kidney that contains the most of infected corpuscles and it is also in the kidney that the number of parasites in each corpuscle is the greatest. It is common to see hæmatics containing 12, 14, 16 and 18 parasites.

Then, in rank of frequency, come the spleen, liver, intestinal mucous membrane and mucous centre.

(*To be continued.*)

ARECOLINE AS A SUBSTITUTE FOR ESERINE.—The Buntin Drug Co., of Terra Haute, Ind., known to all progressive veterinarians through their celebrated veterinary hypodermic tablets, has written the REVIEW to say that "by reason of the enormous advance in the price of eserine salts, it may be a matter of some interest to the veterinary profession to know that for many conditions arecoline hydrobromate may answer the purposes therapeutically of eserine." In support of this assertion they enclosed a copy of the following letter, and say: "By permission of Dr. Walter Lincoln Bell, 679 Vanderbilt Avenue, Brooklyn, N. Y., we quote from his letter of June 4, 1902: *Buntin Drug Co., Terra Haute, Ind.* :—'I am more than pleased with the action of your arecoline hydrobromate hypodermic tablets as a rapid intestinal evacuant, and have had most satisfactory results follow one-half grain injections (which I have not had to repeat) in treatment of acute intestinal indigestion. I have been rewarded with three good recoveries in severe cases of azoturia from administration of one-grain doses of arecoline hydrobromate; a rapid and profuse salivation follows in from five to ten minutes. In a case of laminitis (founder) there was much improvement after the second injection of one grain arecoline hydrobromate, and the animal was able to resume work the following day.' "

EXTERNAL ULCERATIVE ANO-VULVITIS OF CATTLE —A PRELIMINARY REPORT.

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Read before the 39th Annual Meeting of the American Veterinary Medical Association, at Minneapolis, Minn., Sept. 2-4, 1902.

Terminology.—The first name applied to the disease under consideration so far as I have been able to learn was "contagious vulvitis of cattle." This name was given by S. Stewart in a verbal report¹ before the Missouri Valley Veterinary Medical Association February 9, 1898. The next name put upon record was "infectious ulcer of the vulva," a name given by C. Miller in a paper² read before the Missouri Valley Veterinary Medical Association October 3-4, 1900.

In November, 1901, while investigating this disease in an outbreak which occurred in the practice of S. T. Miller, he told me that he intended to contribute a paper upon the disease for the next meeting of the Iowa State Veterinary Medical Association to be held February 11-12, 1902. I expressed to him the opinion that the names already given to the disease were not appropriate, an opinion in which he readily concurred. He then asked me to substitute a name which he might adopt in his paper. After further study of the disease I submitted the name which appears in the title of this paper. I did this with a full realization of the enormity of the offense of multiplying synonyms and confusing the terminology of a disease. I believe, however, that if a disease has been badly named it is the duty of some one to find a name which is of logical origin and which will be likely to meet with general approval.

The objection to the names already given was twofold. In using the word contagious in the one name and the word infectious in the other the name is made to assume too much. A disease should not be designated infectious or contagious until there is fair proof that it is infectious or contagious. Such proof is lacking in case of this disease. The names were not com-

prehensive enough. They gave but a partial idea of the nature of the process. A name should be as fully descriptive of a disease as is compatible with enforced brevity of a name as applied to a disease. Since adopting the name of my choice for this disease the 17th Annual Report of the Bureau of Animal Industry has been published. On page 28 of that volume reference is made to a disease, which I assume to be the same as the one now under discussion, as gangrenous vulvitis. This name is unsuitable because the process is not gangrenous and because the name is not comprehensive enough.

In defense of the name which I have applied to the disease I would say that the disease is primarily and essentially inflammatory and the name *ano-vulvitis* sets forth this characteristic and at the same time indicates the location of the morbid process. As the inflammation is ulcerative in character, *i. e.*, characterized almost from the beginning by erosion and superficial loss of tissue, it is best defined by the adjective *ulcerative*. As the disease has its inception and in mild cases its localization upon the external surface of the labia^e of the vulva it is very appropriately described by the term *external*. If the mucous membrane of the vulva, which may be considered the internal part, is invaded at all, the invasion is secondary to the skin lesions and occurs only in severe cases.

In applying a new name to this disease I have not been unmindful of the tendency, and in a large measure the accomplished purpose, of medical men to refer all diseases of the external genitals to the domain of dermatoses and to describe each affection under the name of some skin disease which may occur anywhere upon the body. However, the fact that the disease now under consideration extends deeply into the tissues, far beyond the skin, entitles it to a place in nomenclature along with such pathologic entities as gonorrhœa, chancroid and syphilis. One would not be justified in essaying a new name for a disease unless he had first made a diligent effort to identify that disease with one already well known either in human or in veterinary pathology. It is plainly evident that there is no

well-defined disease in animals with which this could be identified. In the field of human pathology I have attempted to identify this disease with noma of the vulva, herpes progenitalis and chancroid, the only diseases of human beings which it even remotely resembles, but without success. Syphilis must, of course, be thought of only to be at once dismissed from consideration. The resemblance to chancroid is in many respects striking, but the difference between them is quite distinct. In order not to prolong this discussion beyond reasonable length I refrain from a presentation of the distinguishing features of these various diseases and the one under discussion, and, instead, refer those interested to recent standard works on genito-urinary diseases and gynecology.

If any one here now or at some other time can supply another name and furnish convincing evidence that it is preferable to the one I propose, I will be very willing to abandon my name for his.

History.—The earliest date at which a report of this disease was made to a veterinary body, so far as I have been able to learn, was February 9, 1898, at which time S. Stewart made a verbal report to the Missouri Valley Veterinary Medical Association. The Secretary of that association reports³ Stewart as saying that a large herd of heifers, originally from about Trinidad, Colorado, was brought to Kansas City and distributed in small bunches among farmers and that all of these heifers became affected. I assume that these heifers were afflicted with the disease now under consideration.

C. Miller reports⁴ that in February, 1898, he observed this disease in 2 herds of young cattle near Ottumwa, Iowa.

Steddon reports⁵ that on February 17, 1898, he began the investigation of what was doubtless an outbreak of this disease in Marshall County, Kansas. He visited 4 herds in which the disease existed. He was able to trace the outbreak in one herd back as far as December 25, 1897. The owner suspected that one cow had had the disease and had already recovered when he brought the herd to his farm, December 18, 1897. This is

the earliest outbreak of this disease that I have any information about.

Parker reports⁶ that in December, 1899, Steddom investigated an outbreak of this disease at Westmoreland, Kansas.

S. H. Johnston has informed me⁷ that in the winter of 1899 he met with an outbreak at Lake City, Iowa.

In January, 1900, I had my first experience with this disease in an outbreak which occurred in a herd at Harlan, Iowa, in the practice of D. H. Miller.

In 1900 or 1901 a disease which, from the brief description given, I would suppose to have been ulcerative ano-vulvitis was reported from Ohio.⁸

The 17th Annual Report of the Bureau of Animal Industry contains on page 28 the following statement by Salmon: "Two outbreaks of gangrenous vulvitis in cattle were reported during the fiscal year and specimens forwarded . . . for examination."

In November, 1901, I investigated outbreaks in several herds at Shelby, Iowa, in the practice of S. T. Miller. These outbreaks have already been reported⁹ upon by Miller in a paper read before the Iowa State Veterinary Medical Association, Feb. 12, 1902.

In November, 1901, an outbreak occurred in a small herd near Ames, Iowa.

In December, 1901, an outbreak occurred in a herd at Humboldt, Iowa, in the practice of J. Nicholson.¹⁰

This is as much of the history of the disease as I have been able to procure. I would not venture to assert that this is a new disease. It is certain, however, that it has not as yet been adequately studied and described. It is not improbable that the disease has been known to veterinarians and laymen for a long time, but no one has been actuated to make mention of it in writing until within the last five years, and then only very briefly.

Kinds of Animals Affected.—So far as I have been able to learn, external ulcerative ano-vulvitis is circumscribed to the bovine species. Females are by far the most frequently af-

fected. In one herd of 25 cattle, 1 to 6 years of age, which I inspected, in which were 21 females and 4 males, all of the females were affected, but none of the males. In another herd which I inspected, there were in one bunch 32 calves, 8 to 10 months old, of which 15 were heifers and 17 steers. All of the heifers and only 3 of the steers became affected. In another bunch were 8 young calves, half male and half female. The females were all diseased, but the males did not become involved. In another herd which came under my notice, 15 heifers became affected, and after a considerable time 2 steers acquired the disease. Other steers in the same lot escaped. In still another herd in a large feed yard, there were being fed about 50 cows and 75 steers. All the cows were affected, but only 6 steers became involved. Steddom inspected one herd of 25, 17 steers and 8 heifers, in which all of the heifers but none of the steers became affected.

To show that there are some exceptions to this, I may state that in another herd 8 heifers and 13 steers were being fattened in the same yard and all acquired the disease.

In several instances ulcerative ano-vulvitis has been observed in spayed heifers.

In respect to age it may be stated that, although it seems rather more apt to affect young cattle, there is very little difference in susceptibility on account of age. I have seen it in cattle ranging from 2 weeks to 10 years of age. In one herd of 32 head a very aged cow was the only one which escaped. In another case a bunch of 22 adult cows being fattened in a yard were affected and later a number of calves in an adjoining yard became involved. I have never observed the disease in an adult bull.

Season when the Disease Occurs.—Ulcerative ano-vulvitis appears to be a disease of cold weather. I have not seen or heard of its eruption earlier than October 15 or later than March 15.

Etiology.—I shall refrain from an extended discussion upon this important part of the subject, for any statement I could

make would be purely hypothetic. I regret that my opportunities of time and place have not enabled me to make the study in this connection which is so very essential to a complete knowledge of the disease. The cause of the disease remains thus far entirely unknown. It may be stated, however, that in every outbreak which I have studied the affected cattle were kept in filthy yards which had been used jointly by cattle and hogs for 18 to 25 years. Some of these yards are poorly drained and at times when the temperature is high enough to cause a thaw they become veritable mud-and-manure-holes. Cattle have not been known to acquire the disease while at pasture. There is no evidence that the disease has any causal relation to coitus.

IS EXTERNAL ULCERATIVE ANO-VULVITIS CONTAGIOUS?

My observations and those of others indicate that it is probably not contagious. On one farm where I made observations there were 8 calves kept in an orchard where the ground was clean, adjoining a stable-yard in which were 25 cattle, all but 4 of which were affected. Only a fence separated the two bunches of cattle, yet none of the 8 calves became in the least affected. In another outbreak the owner traded a cow affected with ulcerative ano-vulvitis to a neighbor for a cow which was free from the disease. None of the neighbor's herd into which the diseased cow went became affected. Incidentally it may be stated that the healthy cow that went into the diseased herd became affected within a week. S. T. Miller informs¹¹ me that in one instance which came under his observation, a bull from a healthy herd broke through a fence into a neighbor's herd which was suffering from ano-vulvitis, served a diseased cow there and then returned to his own herd and soon thereafter served a cow there; yet this was not sufficient to transmit the disease to the healthy herd.

On March 3, 1902, I received through the courtesy of Dr. S. T. Miller, 2 heifers from a badly diseased herd in Shelby County, Iowa. One of these heifers had been afflicted for about two weeks and the other was in the very early stage of the dis-

ease. On March 8, 1902, 2 healthy heifers purchased from a nearby healthy herd were placed in a small enclosure with them. At the end of 3 months the healthy heifers had failed to acquire the disease. I have no facts which would tend to prove conclusively that the disease is contagious.

Symptomatology.—*Mild Cases.*—In *females* the attention of a close observer is first attracted to the disease by a considerable swelling and reddening of the vulva. On closer examination it is found that this organ is painful on pressure and, perhaps, shows an elevation of temperature. There are no constitutional symptoms. Within a day or two there will be noticed upon the skin at the inferior extremities of the labiæ vulvæ one or more spots varying from one-eighth to one-half inch in size which show a whitening and opacity of the epidermis. At these points shallow ulcers very soon develop. The ulcers are irregular in contour, there is absence of induration at the border, and the floor is either covered with a thin layer of serous, sero-fibrinous or puriform exudate or with a scab. The covering is easily removed and upon removal the ulcer has a bright red appearance and bleeds readily upon being manipulated. The ulcers increase rapidly in size. The floor of well-developed ulcers shows small elevations which appear like granulations, but are really islands of tissue which have proven more resistant to the necrotic process. The usual seat of the ulceration is at or near the inferior commissure of the vulva, but it may be localized higher up on the vulva or even upon the anus. In case an ulcer is located close to the muco-cutaneous border of the vulva and extends so deeply as to pass through the skin, its edge may encroach upon the mucous membrane of the vulva; otherwise the vulvar mucosa remains intact. There is no itching, no secretion from the vaginal or the vulvar mucous membrane, no discernible discomfort and no constitutional disturbance. The disease is purely local and is mild in its manifestations. In *males* the trouble is at times localized upon the anus and the skin contiguous thereto, but is more frequently found upon the folds of skin passing from the root of the tail toward

the sides of the anus. The features of the ulceration here are the same as in case of the related structures of the female.

Severe Cases.—Ulcerative ano-vulvitis may assume a very grave character, producing extensive necrosis of the tissues and in the worst cases leading to the death of the animal. In females there is a considerable number of cases in which the ulcerative process leads to the loss of the lower portion of the lips of the vulva, leaving only a large, angry-looking, raw surface to mark their place. The ulcer in these cases is phagedenic in nature, bringing about a uniform and rapidly advancing superficial necrosis with sloughing of the necrotic tissues at a correspondingly rapid pace. No large masses of necrotic tissue remain to become putrid, but as fast as the tissue becomes devitalized it is cast off. Thus the process, no matter how much the body is invaded always remains superficial. It is always a true ulcerative process. The necrosis is confined to the surface. In cases of this degree of severity the affected parts emit a very repulsive odor of putrefaction.

The animal loses flesh, is stunted in growth if a young growing animal, the coat is roughened and there is general unthriftiness.

In a few cases the entire vulva and anus undergo disintegration. One yearling heifer which I examined in January, 1900, showed loss of all the tissues between the sacrum, a line about 2 inches inferior to the vulva, and the ischial tuberosities. The loss of tissue extended inward as far as the ano-rectal and the vulva-vaginal boundary. A very large, foul-looking cavity was thus produced. The odor was very repulsive. Still the ulceration was superficial, the dead tissue being in a thin layer. This animal had been lying for several days and kept the recumbent position in spite of urging; refused to eat; had lost much flesh; its coat was rough; was constipated and the urine was retained; it strained at short intervals and persistently, though it did not succeed in passing any faeces or urine. Its condition was deplorable. As recovery seemed out of the question, and, as the resulting deformity of the parts would have rendered the animal

useless if healing could have been induced, the heifer was killed in order that an autopsy might be made. I have reports of 8 other cases which were nearly, if not quite, as badly affected as this. Three of these died of the disease and the others recovered. One of the three that died was a cow 5 years old and the other two were heifers 8 to 10 months of age.

Animals in which the disease makes such alarming progress stand about with the back arched; lose flesh rapidly, become rough in the coat; are constipated; eat sparingly; emit a very offensive odor and evidently suffer much discomfort. The 2 heifer calves spoken of above which died did not suffer from decubitus. They were able to walk about in the evening, but were found dead the next morning.

In *males*, so far as I have been able to learn, the disease does not assume the very grave form seen in females. The invasion is in some cases quite extensive about the anus and root of the tail. In the case of a steer 10 months old which I inspected, there was marked ulceration around the root of the tail, especially on the dorsal surface, and extending forward over the last two sacral vertebræ. The destruction of tissue extended to the bone and there seemed to be imminent danger that the tail would be separated from the body. I have not learned of any deaths in males from this disease.

Course.—It must be admitted that, as a rule, the course of ulcerative ano-vulvitis is rather mild, even when no treatment is applied. I have a record of one herd which I inspected, nearly all of the individuals in which were afflicted, yet, although they were not favored with any treatment, they all made good recovery, without deformity. The disease, however, assumed a chronic course as it existed in the herd for about 5 months and did not disappear until the cattle had been put upon pasture in the spring. The disease, once started, will get a foothold upon all, or nearly all, the individuals in the herd in an incredibly short time, say in 10 days or two weeks at most. Treatment cuts short the progress of the disease. Most cases will be cured in 2 weeks to a month. Severe cases yield much less promptly.

One of the fatal cases in which the necrosis was very destructive to the tissues ran a very short course, the animal having died of the disease within 2 weeks after its onset. The heifer referred to above as having been killed for autopsy and in which the destruction of tissue was very great, is an example of an acute form of the disease, the course in this case not having been over 3 weeks. Cases in which extensive necrosis occurs within 2 or 3 weeks are by no means seldom encountered.

The period of incubation, using this term with reserve in this connection, is very short. In one herd that I inspected a healthy cow for which the owner had traded became affected within a week after being put into a diseased herd. Two other cows brought into this diseased herd at another time also became diseased within a week. In another herd which came under my notice 2 heifers, about 8 months of age, which had been brought into the diseased herd in a healthy condition 10 days before my inspection, I found to be in the early stages of the disease. In still another case a carload of fat cattle which had been affected were taken out of the yard for shipment and 25 head of cows and steers were at once put into the yard. Within 3 weeks nearly all of them had contracted the disease.

The course of the disease in a 6 month old heifer which I had under observation was as follows: On March 3, 1902, 2 weeks after the onset of the disease, the lower part of the vulva was found destroyed by ulceration, leaving a raw surface about 3 inches in diameter. March 12 it was noticed that granulation was well established and that the ulcer was diminished in area by one-half and covered by a dry scab. March 16 further improvement was noted. March 22 the heifer was practically well, a scab about one-third inch in diameter being the only evidence of disease apart from the deformity resulting from the loss of tissue.

The course in a grade heifer 8 months old which I had under observation was as follows: March 3, 1902, this heifer showed on the right lip of the vulva near the inferior commissure a shallow ulcer three-fourths of an inch in diameter and on

the left lip a little higher up an ulcer of about half this size. March 7 this heifer showed marked improvement. March 12 is nearly well. March 16 has entirely recovered. Neither of these heifers received any treatment except a change of locality.

Pathological Anatomy.—*Macroscopy.*—In all cases there is at the inception of the attack tumefaction and congestion of the vulva or other parts affected. In *mild* cases ulcers appear on the labiæ vulvæ, most commonly at or near the lower commissure, or about the anus of females, or upon the anus or the folds of skin at the base of the tail in males. In ulcers of most recent development only the epidermis and the upper portion of the corium have undergone the destructive process, but soon the entire thickness of the corium breaks down and is sloughed off leaving an ulcer of considerable depth. The ulcers are in a few cases nearly free of exudate and present a reddish floor, but are in most cases surmounted by a serous, sero-purulent, purulent or scaly covering. The exudate is easily removed and when removed there is presented an angry, red, ulcerating surface which bleeds readily upon manipulation or scraping. These ulcers are irregular in contour and their borders are not indurated. Upon the floor of the deeper ulcers there may be seen islands of tissue which have proven to a certain degree resistant to the necrotic process. In *severe* cases the affected parts are involved in an extensive disintegrating process which rapidly invades the tissues. The entire anus and vulva and surrounding tissues for several inches in every direction may be destroyed. The surface of the enormous ulcer thus produced is covered by a layer of exudate and necrotic tissue. This layer is, however, in all cases which I have observed surprisingly thin. Instead of having a thick stratum of gangrenous tissue separated from the healthy tissue by a well-defined line of demarkation as one might expect, there is this thin stratum of exudate without the presence of any distinct line of demarkation. The process of necrosis is at all times a superficial one. The dead tissue is cast off as soon as death takes place. The process is in the truest sense an ulcerative one. At some places upon

the surface the tissues are frayed out, presenting a large number of filamentous projections one-half inch or more in length. When the necrotic debris is removed there is revealed a highly inflamed surface directly underneath. One needs to cut only a short distance—not over one-half inch at most—into this tissue in order to reach apparently healthy tissue.

In one animal, a yearling heifer, referred to above as being very badly affected, upon which I had an opportunity to make an autopsy, I was able to study the pathological conditions quite carefully. The external lesions were such as I have just described. The general condition of the body was nearly normal. The only departure from normal that was distinctly visible was a serous infiltration of the lymphatic glands, especially in the posterior part of the body. These glands were much enlarged, quite succulent and grayish in color, having lost the pinkish tinge common to healthy lymphatic glands. There was no indication of suppuration or disintegration of any sort in the lymphatic glands.

Microscopy.—There is nothing especially characteristic about the microscopic changes in the tissues. These changes are such as are common to inflammatory conditions on surfaces in which the necrotic process predominates over the reparative process. In a general way it may be said that there is at the surface a stratum of necrotic tissue elements underneath which is a stratum in which an active inflammatory process is going on and which gradually merges into healthy tissue below.

At the surface edge of a section made through the floor of an ulcer and at right angles to the floor is a thin layer of detritus consisting of fragmented nuclei, broken down cell contents which has undergone liquefaction and subsequent desiccation, and a liberal amount of fibrin of the fibrillar variety. Below this is a layer of dense cellular infiltration in which the cells are chiefly polymorphonuclear and small mononuclear leucocytes. The presence of the large number of polymorphonuclear leucocytes is in harmony with the clinical aspect of rapid ulceration. In the thinnest sections the two varieties of cells

mentioned are packed so closely together as to obscure or at least to make uncertain the identification of any other varieties of cells which might be present. Below this is a deeper layer of round-cell infiltration which gradually merges into the healthy tissues below. This layer is freer from fibrin than the other layers and is free of detritus. In double staining more of the nuclear and less of the contrast stain is taken. The field is much clearer and more transparent. The walls of the blood vessels in this stratum show cellular proliferation which results in considerable thickening of their walls. The lumen of the vessels and the perivascular spaces are filled with blood corpuscles of which the red ones greatly predominate. Accumulations of red blood cells, partly broken down, are seen at other places without any special reference to the vessels. Occasionally there can be seen newly formed capillaries. A good deal of fibrillar fibrin is found scattered throughout this layer. Plasma-cells, polymorphonuclear leucocytes, transitional leucocytes, lymphocytes and fibroblasts are met with on every hand in this stratum. There is marked serous infiltration between the trabeculae of connective tissue. This is most prominent in cases where the ulceration has not advanced very far.

There are no well-defined lines of separation between the three strata just described. They merge gradually into one another. The predominant character of the one gives way insensibly to the predominant character of the other.

In one case I was enabled to study a small ulcer which had at its greatest depth but very little more than passed through the cutis. At the edge of the ulcer the integrity of the skin was preserved, there being no demonstrable lesion in it. Approaching toward the centre of the ulcer the first noticeable change was a necrosis of the epithelium of the epidermis shown by a sort of melting together of the cells and the failure of their nuclei to take the stain. At this point there is no especial change in the corium. Still farther toward the centre of the ulcer round-cell infiltration and chromatolysis are encountered. These, of course, involve the corium. Even at this point the

general outline of the epidermis is preserved, it being stretched, parchment-like, over the infiltrated corium beneath, although the morphology of the cells is impaired. Finally one comes to a point where the skin is entirely lost and there is presented a picture such as already described elsewhere.

I have been able to study sections of tissue from animals suffering with this disease in all its stages. Some of these tissues were obtained at autopsy, while others were removed from the living animal at the time of treatment. The tissues were fixed in formaldehyde and embedded in celloidin. The stains used were Van Gieson's, the double stain of hematoxylin and eosin, the double stain of eosin and methylene-blue, and Weigert's fibrin stain.

Diagnosis.—The diagnosis of external ulcerative ano-vulvitis of cattle offers no difficulties. There is no other disease with which there is much likelihood that it will be confounded. The objective signs are sufficient ground upon which to base a diagnosis. The early evidences of the disease are apt to be overlooked. If there is an unusual accumulation of filth having the appearance of a small scab about the lower commissure of the vulva or about the anus, or if these parts are swollen and reddened, there is reason to suspect the presence of the disease and the animal should at once be properly secured and thoroughly examined.

Differential Diagnosis.—Eczema.—Eczema of the skin of the anus or vulva may present naked-eye features similar to those of the early stages of ulcerative ano-vulvitis, but the presence of itching in eczema and its absence in this disease would probably serve to distinguish them from each other. Eczema is characterized by vesicles and by a more diffuse distribution. Moreover, it does not extend deeply into the tissues. The more severe forms of ulcerative ano-vulvitis could not be confounded with eczema.

Vesicular Exanthema of Cattle.—The absence of participation of the vulvar and the vaginal mucous membrane in the pathologic process, the failure to establish any relation with

coitus, the absence of involvement of the male genital organs, the extensive necrosis in bad cases of ulcerative ano-vulvitis would be sufficient to preclude the possibility of mistaking one of these diseases for the other.

Prognosis.—As a rule this may be considered favorable even without treatment. There are some cases, however, which will run rapidly to a fatal termination unless properly treated. Treatment cuts short the course of the disease, and even severe cases, with few exceptions, yield well to treatment. The mortality in the outbreaks which have come under my observation has been about 2 per cent. There has been no mortality in cases which have been treated. Complete recovery, absence of deformity, restoration of heifers to full usefulness are dependent upon treatment early in the disease in each individual case. If neglected, any case may very soon get beyond control.

Treatment.—This may be curative and probably preventive, although our ignorance as to the cause renders preventive treatment problematical. There is some indication that the causative factor is an infectious material derived from yards which have grown filthy from prolonged use without sufficient attention to cleanliness. If this be so the inference would be that the disease can be prevented by thoroughly cleaning the yards by ploughing and hauling to the fields for fertilizer several inches of the surface ground and replacing it with fresh earth, or, better, with gravel or brick pavement. The manurial value of the surface ground would, I believe, be sufficient to compensate for the labor of removing it. If an earth or gravel bottom is maintained it should always be kept well bedded with clean straw. Cattle yards are as a rule too large. If their size was diminished they could the more readily be kept clean.

Curative treatment has been followed with good success. The underlying principles are disinfection and the application of some protective dressing. My experience leads me to believe that the removal of the affected herd to new and clean quarters as soon as the presence of disease is determined would be a very

valuable part of the curative treatment and would in the milder cases be all the treatment that is necessary.

Steddom reports¹² as follows in reference to the treatment of an outbreak in Kansas: "The first appearance of this disease in the calves was noticed . . . three weeks ago, and a week later treatment with medicine . . . (nitrate of silver as a caustic and creolin—5 per cent. solution—as a wash) was commenced. But one application of caustic and creolin has been given each animal. . . . They are all rapidly recovering."

C. Miller reports¹³ his treatment as follows: "Using carbolic acid as an antiseptic, I took hot water and cleansed the parts, tail included, thoroughly, after which I applied a strong solution of ordinary white lotion, using a piece of cotton in applying it to the parts. The tail, where it came in contact with the vulva, was covered with vaseline, also the parts of the vulva not involved in the ulcer. In those cases where the ulcer was small I touched with a pencil of silver nitrate, which had the effect of arresting the action of the microorganism at once. In fact, all the ulcers in whatever stage responded to the former treatment and commenced healing slowly from the first application. These applications were made four consecutive mornings, when the healing process was so far advanced that further treatment was deemed unnecessary, and within ten days they were completely healed with no traces of the disease except in those cases where the vulval tissues were so nearly completely destroyed before any application was made."

D. H. Miller reports¹⁴ as follows upon his treatment: "I removed all the diseased tissue that I could with curved scissors. Of the 15 treated I applied to one-third tincture of iodine, to another third was applied a strong solution of corrosive sublimate and to the rest a strong solution of creolin. This treatment was repeated twice. All recovered very rapidly. One treatment appeared to be as good as another. There has never been any recurrence of the trouble in the two years since the outbreak."

S. T. Miller reports¹⁵ as follows upon his method of treatment: "I used for treatment a wash of a strong solution of mer-

cury bichloride to cleanse the parts, after which I applied an ointment made up as follows :

R	Iodoform,	20 grains
	Oil of eucalyptus,	40 minimis
	Carbolic acid,	20 minimis
	Petrolatum, enough to make	2 ounces.

This treatment effected a very speedy and permanent cure."

Miller does not state the strength of the corrosive sublimate solution used, but has since informed me that it was about 1 to 200.

L. A. Klein reports¹⁶ as follows upon the treatment he pursued in the outbreak at Ames : " My treatment consisted of cleansing with creolin solution, cauterizing with nitrate of silver, followed by daily dressing with an ointment of acetate of lead 20 parts, tannic acid 10 parts, carbolic acid 5 parts, lard 65 parts. The case did well under this treatment. It was not very far advanced when I took hold of it."

J. Nicholson informs me¹⁷ that in a herd he was called upon to treat for ulcerative ano-vulvitis he at first made use of a 5 per cent. solution of carbolic acid, applied by projecting it upon the parts with an ordinary piston syringe, and followed it by application of boric acid. This was used about 2 weeks without good results. The treatment was then changed to creolin (Pearson) 1-40 applied by means of a syringe. The disease yielded quickly to this treatment. Only two applications were made except in 3 very aggravated cases which had to be separated from one another and treated by creolin applications over a considerable period of time.

Although other measures doubtless do bring good results, I believe the best results are to be obtained by removal of necrotic tissue with the scissors or the curette, disinfection with some strong disinfecting solution such as referred to above followed by the application of some such ointment as is formulated above. The advantages in the use of an ointment are that it keeps a curative agent constantly in contact with the affected area, prevents further contamination and provides in a measure

against the excoriating influence of the movements of the tail.

I am convinced, also that removal of the entire herd to new, clean quarters and the subsequent isolation of the severe cases will materially hasten the recovery.

Terminations.—Mild cases make a complete recovery without any visible scar formation. In moderately severe ulceration, where healing takes place without extensive scar formation, the labiæ of the vulva are frequently left permanently thickened, indurated and with diminished elasticity. In animals in which the ulceration has been extensive, if recovery occurs, there results a very marked deformity of the vulva. I offer the following observations which I have made in this connection :

No. I.—Grade Hereford heifer, 8 months old. This heifer had suffered considerable ulceration of the vulva, but the healing took place without treatment within 5 weeks after the beginning of the attack. After healing had taken place I noticed that the orifice of the vulva was so small as to barely admit my little finger. Believing that this heifer would be useless for breeding purposes, I performed oöphorectomy upon her. I have seen her a number of times since and she is doing well.

No. II.—Grade Aberdeen Angus heifer, one year old. This heifer suffered a very severe attack, the ulceration extending quite deeply, as far laterally as the tuberosities of the ischium, upward to the tail and downward to a line two inches below the vulva. Since healing there is scarcely any trace of the lips of the vulva and the external orifice admits only the index finger. The anus is considerably shrunken by scar-formation. The growth of the animal has been much interfered with by the disease.

No. III.—Grade shorthorn heifer, 8 months old. Was quite badly affected. After healing only a small vestige of the labiæ remained. The orifice will admit only the forefinger. The animal has been much stunted in growth.

No. IV.—Grade shorthorn heifer, 8 months old, which had been seriously affected. Now there is almost no part of the lips

of the vulva left. The vulvar orifice is only a slit about five-eighths of an inch long and admits with difficulty the end of a lead pencil of ordinary size. The urine is passed with considerable force in a stream about the size of a large wheat straw. This heifer is much stunted in growth on account of the disease.

No. V.—Grade heifer, 8 months old. The lips of the vulva are tumefied, knotted and much indurated. The vulvar orifice is about one and one-half inches long and admits the index finger easily. The animal is considerably stunted by the disease.

No. VI.—Grade shorthorn yearling heifer. Vulva tumefied and indurated. Orifice will admit two fingers. There is considerable scar-formation.

In heifers thus deformed their posterior aspect bears a close resemblance to that of a steer, and a careful examination is in some cases required in order to make sure of the sex of the animal.

D. H. Miller reports¹⁸ that in the worst cases among the heifers in a herd which he treated, the vulva was entirely destroyed, and when healing occurred under the influence of treatment, only a small hole was left for the heifer to urinate through.

In the most malignant cases the necrosis continues to an extreme limit, causing extensive loss of tissue until finally death results.

Economic Importance.—This has in a large measure been indicated under the head of "Terminations." It is readily seen that such widespread loss of tissue with consequent deformity and contraction of the outlet of the genital canal would unfit a heifer or cow for breeding purposes. She would receive the service of the bull with difficulty if at all. But, even if service of the bull would be possible, or, if impregnation should be accomplished by some artificial means, still there would remain an obstacle to parturition which would, to say the least, render breeding impracticable. The only logical recourse is to submit such an animal to oophorectomy. This would be little, if any, loss in

case of a grade animal or a pure bred one of small intrinsic value, but the loss would be very serious if a valuable pure bred heifer or cow should be involved.

The loss through fatalities is not to be overlooked in the consideration of the economic importance of the disease. If we add to these factors the loss through poor nutrition, stunting in growth, trouble and expense of treatment and discouragement to the owner, there is in the aggregate enough economic loss to give ulcerative ano-vulvitis a rank of considerable importance in the catalogue of diseases which afflict our herds.

The owner of 80 head of cattle, about two-thirds of which were affected and two of which died, estimated his loss on account of the invasion of the disease at \$300.00. Another farmer sold a carload of imperfectly fattened cattle because they became affected. He lost by having deficient weight and by a subsequent advance in the price of fat cattle per pound.

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MOLASSES AS A FOOD FOR HORSES.

BY GEORGE H. BURNS, D. V. S., BROOKLYN, N. Y.

Read before the 12th Annual Meeting of the New York State Veterinary Medical Society, at Brooklyn, Sept. 9 and 10, 1902.

In volume XXV., No. 11, of the AMERICAN VETERINARY REVIEW, published in February, 1902, Dr. G. E. Griffin, Veterinarian Artillery Corps, U. S. A., and stationed at Fort Sheridan, Ill., makes a most interesting and instructive report upon the value of molasses as a food for horses; while serving with the 5th cavalry in Porto Rico from 1898 to 1901, he observed that the natives fed their ponies exclusively upon a very poor quality of grass mixed with molasses, and that a large quantity of molasses was added to their drinking water; and that the animals endured surprisingly the hard usage and brutal treatment they were subjected to by the native Porto Rican and Spaniard.

This caused him to begin a series of experiments with feeding molasses to army horses. He selected eight horses on January 1st, 1899, and continued to experiment until June 1st, same year. The regular rations, consisting of twelve (12) pounds of oats and fourteen (14) pounds of hay per day for each horse, were gradually reduced and cut grass mixed with molasses, diluted with twenty-five per cent. (25%) of water was substituted. The animals the first day or two refused, or ate but sparingly of this substitution, but gradually became accustomed to it, and by the tenth (10th) of the month all the horses were eating thirty-five (35) pounds of cut grass and fourteen (14) pounds of molasses daily, when the regular rations of oats and hay were withdrawn.

From the 1st until the 17th day of January, these animals were doing the usual routine work of the garrison, amounting to five (5) or six (6) miles a day. Beginning on the seventeenth (17th) of January the regular amount of work, consisting of twelve (12) miles a day—that is, eight (8) miles walk, two (2) miles regulation trot, one (1) mile slow gallop, and one

(1) mile fast gallop, and carrying about two hundred three (203) pounds—was begun and continued every day except Sundays until the termination of the experiment.

During the first ten (10) days, while the regular ration of hay and oats were being reduced and the horses failing to eat the new food, each animal lost about twenty-seven (27) pounds in weight; but, beginning on January 26th, they commenced to pick up, and by the 5th of February all of them regained their original weight and continued to improve, so that by the 1st of March, each animal had gained about fifty (50) pounds over the original weight.

Early in February it was observed that all the animals showed a tendency to constipation, and to correct this a little bran was given, which had to be repeated on an average of every two (2) weeks.

Dr. Griffin also experimented with four (4) horses which had been on the sick report for a long time, suffering from chronic indigestion and its consequent loss of condition, scratches, skin abrasions, etc. On February third (3d) all of them were suddenly deprived of their grain and hay and put on a ration of six (6) pounds of molasses and twenty (20) pounds of grass daily. They refused the new food for two days, but on the sixth (6th) they cleaned out their mangers and continued to feed well. These animals commenced to pick up at once, and within a few weeks had improved so wonderfully that their drivers failed to recognize them.

Dr. Griffin concludes his interesting article by saying that all the horses partaking of the molasses improved in spirit, coat, condition, wind and flesh, looked better than any other horses in the garrison, and he draws the following conclusions:

(1st) Thirty-five (35) pounds of grass and from thirteen (13) to fifteen (15) pounds of molasses as a daily allowance is sufficient to maintain a horse of one thousand (1000) pounds weight in good condition in a climate similar to that of Porto Rico.

(2d) Sudden change from dry food to this ration is not at

all injurious and does not derange the digestive apparatus.

(3d) That horses on this ration appear to be able to do more work and present a much better appearance.

(4th) That the cost of feeding is reduced from about twenty-seven (27) cents per day, to fifteen (15) cents per day.

Dr. Liautard, who has spent the last three (3) or four (4) years in Paris, France, but continues to take an active interest in veterinary matters in this country, having read Dr. Griffin's article on "Molasses as a Food for Horses," made a thorough investigation of the subject in the French Capital, and publishes his discoveries in a leading article in Volume XXVI, No. 4, AMERICAN VETERINARY REVIEW, issued July, 1902. Dr. Liautard, recently visited the French horse-show and noticed a little side exhibition where molasses bread and molasses biscuits were sold. He attended a meeting of the Société Centrale where the question of molasses feeding became the subject of a most interesting discussion, in which very important facts were presented by one, Mr. Lavalard, who is director of the cavalry of the Compagnie Generale des Omnibus, and having charge of fifteen hundred (1500) horses.

Mr. Lavalard has had all his horses which weigh between five hundred (500) and six hundred (600) kilog. each, fed on the following rations for a long time:—

Crushed oats, corn and beans mixed, 7 kilog.; molassed peat, 2 kilog.; cut straw, between 3 and 4 kilog., with no hay whatever; and reports most gratifying results, and said that the cost of feeding had been reduced from about fifty-five cents (55 c.) to a fraction over thirty-five (35 c.).

Dr. Liautard says that many compounds of molasses have been made, but that molassed peat, sold under the name of molassine, is to-day extensively used, not only in Paris, but in the German, Austrian and Russian armies, and from the general total of observations made, the following conclusions have been adopted:

(1st) That there is no danger or inconvenience whatever to give in the daily rations of a horse at least six (6) kilog. of

molassed peat of good quality in the proportion of twenty per cent. (20%) of peat and eighty per cent. (80%) of molasses.

(2d) That to the extent of one (1) kilog., at least molassed peat takes absolutely the place of the same quantity of good oats.

(3d) That by this change of diet the general condition, muscular power, energy to work, and health, not only remain perfect, but that the coat looks better and more glossy.

As veterinarian to the firm of Arbuckle Bros., sugar refiners and coffee dealers, of this city, employing about one hundred (100) head of heavy draft horses, which have been fed to a very large extent upon molasses for over one (1) year, I have had an excellent opportunity to observe its effects, not only as to its nutritive value as a food, but also as to its action upon the general health of horses.

Arbuckle Bros. having shipped cargoes of molasses to Europe to be used as food for horses, decided to experiment with it in their own stables, and on April 15th, 1901, selected two extremely unthrifty looking animals as subjects.

No. I. weighed 900 pounds; No. II. weighed 940 pounds. Both animals were photographed and their pictures plainly show their miserable condition.

Without any preparation whatever, they were suddenly deprived of their usual rations of hay and oats and received one (1) quart of molasses diluted with three (3) quarts of water and mixed with five (5) pounds of cut hay three (3) times a day and were allowed to drink all the water they wanted, but received no long hay, nor any other kind of food and no exercise. For a day only they minced over their rations, the second day they cleaned out their mangers, and continued to eat well until the termination of the experiment, which lasted six weeks. It was noticed that during this time both animals consumed larger quantities of water, but showed no symptoms of constipation or diarrhoea or any other signs of digestive disturbances; their general condition improved wonderfully in two (2) weeks time. No. I. had gained 40 pounds in weight; No. II. had gained 45 pounds in weight; in four weeks time No. I. had gained 95

pounds in weight and No. II. had gained 102 pounds in weight. Both animals were shedding their old coats and by June 1st, No. I. weighed 1075 pounds and No. II. weighed 1086 pounds and both showed beautiful new glossy coats and when led from the stable were full of play, life and energy, and could not have been recognized as the same animals. One was sold to a retail grocer in this city and the other was retained by the firm and sent to work. Both animals remained in good condition and did their work well, in spite of the fact they had not been exercised in six (6) weeks.

The success of these experiments caused the firm to begin the systematic feeding of all their heavy truck horses, one hundred (100) in number, with molasses on June 1st, 1901. At this time all of the horses were in fair working condition ; average weight of each about seventeen hundred (1700) pounds, and doing an average days work of ten (10) hours, seldom going any faster than a walk, but pulling very heavy loads ; two-horse trucks carrying twenty-five (25) bbls. of sugar, or about five and one-half ($5\frac{1}{2}$) tons ; three horse trucks carrying thirty-five (35) bbls. of sugar, or about seven and three-quarter ($7\frac{3}{4}$) tons. Each animal received a mixture of one (1) quart of molasses diluted with three (3) quarts of water and thoroughly mixed with (6) pounds of good quality of cut hay, one and one-half ($1\frac{1}{2}$) quarts of corn meal, and two and one-half ($2\frac{1}{2}$) quarts of course bran for breakfast, five (5) quarts of dry oats in the middle of the day while in harness, and the same mixture and quantity of molasses, cut hay, corn and bran for supper, with eleven (11) pounds of long hay added for the night.

Under these rations and doing the same amount of work all the animals gradually improved in condition and gained in weight, their coats became slick and glossy, and to-day there is no finer-looking truck horses in Greater New York. Their general health has been excellent, and cases of acute indigestion, or spasmodic colic, have been very rare in Arbuckles' stables during the last fourteen (14) months, where they were quite frequent in former years.

The success of Arbuckles, together with the report published by Drs. Liautard and Griffin, prompted me to try molasses feeding among my own horses and some of the patients in the infirmary.

Two patients, one a brown gelding greatly reduced in condition from the acute pain of an open joint, and the other a bay truck horse, poor in flesh and very lame from painful ringbone on an hind extremity, together with my own five driving horses, were selected for the experiment.

On Aug. 1st, patient No. I., brown gelding, weighed 1250 pounds; patient No. II., bay truck horse, weighed 1140 pounds. They received three (3) pounds of molasses, diluted with three (3) quarts of water and mixed with six (6) pounds of cut hay, and two and one-half ($2\frac{1}{2}$) pounds of corn meal, and two and one-half ($2\frac{1}{2}$) pounds coarse bran morning and evening, and about three (3) pounds of long hay at night. My five (5) driving horses received the same rations with the addition of four (4) quarts of dry oats in the middle of the day.

The two (2) patients improved very rapidly in condition, and on Aug. 15th, No. I., brown gelding, weighed thirteen hundred and twenty (1320) pounds, having gained 70 pounds. No. II. weighed twelve hundred (1200), showing a gain of 60 pounds. Sept. 1st, No. I., brown gelding, weighed fourteen hundred and fifty (1450) pounds and No. II., bay truck horse, weighed twelve hundred and fifty (1250) pounds; total gain in thirty-one days, No. I., brown gelding, 200 pounds. No. II., bay truck horse, 110 pounds.

I very much regret that my driving horses were not weighed when the change of diet was commenced, but they have done their usual amount of work, they drive up well, do not flag out in traveling long distances, and are certainly looking much better than they were five or six weeks ago, when they were getting from twelve (12) to fifteen (15) quarts of white oats and about fifteen (15) pounds of long hay daily, and as in all other experiments, not the slightest signs of indigestion were noticed.

From the above described practical feeding experiments conducted in different countries, and under widely different conditions, it is safe to conclude :

(1st) That molasses of a good quality is a most nutritious food for horses, easily digested and assimilated, and will in many cases correct faulty digestive processes.

(2d) That one quart of molasses at a cost of three (3) cents will take the place of from three (3) to four (4) quarts of good quality oats at a cost of from four and one-half ($4\frac{1}{2}$) to six (6) cents.

(3d) That a sudden change from dry oats to molasses mixed with other food stuffs is perfectly safe and causes no disturbances of the digestive organs.

(4th) That molasses-fed horses will do fully as much work and at the same time remain as a rule in much better general condition than animals fed on dry food, while the cost of feeding is reduced from twenty-five (25) to thirty-three (33) per cent.

At first glance it seems very strange that an article of a semi-solid consistency, sweet of taste, dark in color, sticky and unpleasant to handle, should be able to take the place of nice, clean fine looking oats, which from time immemorial has been the recognized standard food for horses ; but when we study the subject for a few moments from a physiological point of view, and at the same time consider the conditions under which our work horses are kept, most all of you will probably agree with me that it is not at all surprising, but perfectly logical.

It is an established physiological fact that all foods entering the animal body by way of the mouth must be reduced to a soluble condition before absorption into the general circulation can possibly take place.

It is also an undisputed fact that starches must be converted into sugar or glucose before absorption or assimilation takes place.

Oats being a hard dry substance and largely composed of starch, requires a great deal of preparation on the part of the

animal before it is reduced to a soluble condition and its starch converted into sugar. It must be thoroughly masticated or triturated by the molar teeth and mixed with the various salivary secretions before it is fit for stomach digestion.

In the stomach and small intestines the gastric, pancreatic and intestinal juices, together with the bile from the liver, must be brought into contact with it, each in its turn and each doing its allotted work, before the wonderful chemical transformation reducing the hard dry oats into the nutritious pabulum called chyme is accomplished.

The question now arises : Is this intricate process always accomplished in the horse ? Anyone who has had experience with hard-working draught horses will agree with me that quantities of whole oats, or partly crushed oats in various stages of decomposition and putrefaction, are found in the manure of many horses, and in bad cases the manure is of an unnatural color, very offensive and of a semi-solid consistency. This proves that the process of digesting oats is imperfectly performed, that they are not always reduced to a soluble assimilable condition and, therefore, not only lose much of their nutritive value as a food, but remain in the intestinal tract decomposing, fermenting, generating gases and causing colics and more frequent milder forms of intestinal disturbances.

Many such horses are always hungry and will eat unlimited quantities of oats and receive but little benefit therefrom, and remain in poor condition, while others become slowly poisoned from the undigested fermenting residue constantly present in the alimentary canal and have but little appetite for food of any description.

Now, let us consider the conditions under which our work horses are kept : many of them work from eight (8) to twelve (12) hours a day, draw heavy loads and are obliged to travel many miles ; at five (5) or six (6) in the morning they receive a full meal of dry oats, and after feeding are allowed all the water they desire to drink and are immediately placed in harness and kept steadily to work until 11 or 12 o'clock, when they

receive their noon meal, consisting of from four to eight quarts of dry oats fed out of a canvas nose-bag ; as soon as the meal is finished they must again assume their regular drudgery, and continue until 5, 6, or 7 o'clock at night, returning to their stables completely tired out and greatly exhausted. From four to eight quarts of oats and from 16 to 20 pounds of hay are placed in front of him and he is left for the night.

The poor animal is hungry when his noonday meal is served, and he is hungry and exhausted when his evening rations are placed in front of him. His system demands nutrition and he greedily devours his oats and hay, but unfortunately does not take time to masticate it properly, and the above-described digestive disturbances, resulting in mal-nutrition and mal-assimilation, are the inevitable results if he is constantly fed on dry food, which is difficult to digest, and as we have seen requires so much preparation.

Molasses, on the other hand, while it contains a larger quantity of nutritive material than oats, is in a soluble condition the moment it enters the mouth and, therefore, readily digested and absorbed. If properly diluted with water and thoroughly mixed with a liberal quantity of cut hay, a little corn meal and bran, it serves to soften the other foods and renders their digestion much easier, and I believe that most all work horses, at least, would be greatly benefited if they received from two to three quarts of molasses a day.

NEW METHOD OF VACCINATION AGAINST ANTHRAX.—Dr. G. Sobernheim (*Berliner klinische Wochenschrift*, June 2d,) has found that it is possible to immunize sheep and cattle against anthrax by the single or combined use of serum and cultures. Immunization by the feeding of anthrax spores was also found practical. The author made 2,700 injections without a death or any serious disturbance of health in the animals. The practical result was that wherever anthrax was prevalent, it was possible to stamp it out at once. None of the immunized animals were taken sick, during a period of nine months' observation, despite the existence of anthrax in the neighborhood. Occasionally, the injections were of curative value.

BARRENNESS OF BOVINES.

BY CHARLES SCHMITT, V. S., DODGEVILLE, WIS.

Read before the 39th Annual Meeting of the American Veterinary Medical Association,
at Minneapolis, Minn., Sept. 2 to 5, 1902.

During the past month my thoughts often turned to this meeting, and I wondered as to what you might be expecting of me, under the title of my paper. Perhaps I could have selected a more interesting subject, but none more important to the veterinary profession.

Breeders of fancy cattle become alarmed when they pay a good price, say from five to twelve hundred per head for cows or heifers, and then find themselves confronted with a barren animal, seemingly a loss and a poor bargain.

Literature is silent to a great extent on this subject, unless a manufacturer of some device of impregnators or pessaries, urges his sale by attempting to make a few explanatory remarks.

I will not attempt to discuss the barrenness of the male sex, but will confine myself to the female. The field is so large, that any attempt to describe the conditions fully would take volumes and days for discussion. To make my paper short I will mention only the most common and important abnormalities that prevent impregnation of the ovum.

Being located in a district where the breeding of fine cattle is made a specialty, I am quite frequently called upon by owners of such animals, who say: "Doctor, I have a heifer that I got last year and I cannot get her with calf," or perhaps it is a cow that aborted some months ago, "Do you think that anything can be done for her? I would give most anything to get a calf from her. She is a good one; can't be beat." If the veterinarian can not give or do something to correct the abnormality, the fine animal will have to go to the butcher's block, and what a great loss it is to the owner.

It is somewhat difficult for me to give a minute description of the abnormalities that present themselves in those barren

animals without a specimen before us, but with your permission, I will do the best possible under the circumstances. I know that all of you are familiar with the parts in question. The vagina, cervix, womb and the ovaries are the principal organs that we have to deal with in these cases. The following abnormalities are the most common to prevent conception: Stenosis or stricture of the os uteri, catarrh or leucorrhœa, occlusion or unnatural formation of the os uteri.

1st. Stenosis of the Cervix: Among the affections of the cervix, stenosis plays an important part. It may affect the entire canal or a great part of it, or it may be confined to one or both cœstia. Total stenosis of the cervix not infrequently occurs as a congenital defect.

In some cases a very fine probe that can scarcely be seen or felt, will, without much difficulty, penetrate the external os and then enter the uterine cavity proper through the canal. But in the majority of cases this is impossible. To judge from my experience, this high degree of stenosis renders the entrance of the sperma difficult, or may even prevent it. This occurs mostly in cows that have aborted, at about six months' pregnancy.

There is usually a great deal of inflammation and a general discharge from the womb and frequently laceration of the os. With these conditions present, stenosis is confined to the os-externum, and can scarcely be discovered on examination by touch, but by the aid of the speculum is discovered to be a very small round opening.

The opening formed by the external os is round, not soft and flexible, but generally strongly resistant and of a whitish appearance. Desquamation of the epithelium in the surrounding parts also occurs. The cervical canal behind it may be narrowed or normal.

In one case I observed that the cavity was filled with large masses of pus. Here the uterine mucous membrane is frequently in a catarrhal condition. I am not acquainted with the origin of stenosis, but I have observed in several cases that

stenosis occurs from too long continued retention of the placenta or foetal envelopes.

Desquamation of the epithelium and intense swollen cervical mucous membrane easily produce an acquired stenosis of the opening alone.

The experience of the breeders and also of the veterinarians is that sterility in horses is traceable to a considerable extent to stenosis of the cervix. General Dumas gives us in his work on the horses of the Sahara an entire series of remedies, which the Arabs use for the apparently not rare cases of barrenness, what they call buttoned-up mares. These remedies consist mainly in dilating the narrowed cervix with the hand or with some hard instrument. French veterinarians, like Andrea, Eleonet and M. A. Collin, found stenosis of the cervix to be a frequent cause of barrenness. The German veterinarian Phil. Von Walter called attention to the process which the Tyrolese peasants pursue, consisting in an artificial dilating of the os uteri by incision, a proceeding which is said to have been followed by success.

2d. Catarrh : Another condition that prevents impregnation of the ovum is catarrh of the cervical cavity, justly considered as a not infrequent cause of barrenness. It is an important complication of another anatomical lesion, which causes barrenness. But it alone may even obstruct conception, when it causes a great hypertrophy of the mucous membrane, brought about by the swelling of the glandular elements, and above all by cystic degeneration of the mucous follicles. A canal that is already narrowed may be so plugged that it is difficult for a sound to penetrate. The hand here receives the impression as if the sound was passing through a soft but strongly compressed mass ; even in the normal condition it is not very favorable for the advance of the spermatozoa.

This must be still more so in catarrh when the projections tightly fit into one another. In such cases not only the glassy semi-fluid and tough mucus that is produced by the mucous follicles in large quantities collect in the cavity proper. As

the mass is more readily produced than it is voided through the os externum, it not only closes but dilates the canal, which in turn by its resistance exerts a strong pressure against the tough mass of mucus, thereby rendering the advance of the sperma impossible. There have been many cases in which a single removal of the mucous plug has led to conception.

It is impossible to make a reliable statement in regard to the frequency of cervical catarrh as an obstacle to conception. This affection occurs more often and is so common in barren animals, that it is difficult for the veterinarian, except by close examination, to distinguish those cases from other causes, being common with other affections.

3d. Occlusion, or Unnatural Formation of the Cervix : All unnatural formations around the cervix may prevent conception. Neoplasms that occur at the cervix uteri may, under certain circumstances, render conception more or less difficult. We have already become acquainted with catarrh of the cervix, its mucous discharge, cystic degeneration, desquamation of the epithelium, with excessive inflammation which will lead to neoplastic formations. With mucous polypi, the number and size may produce a plugging of the cervical cavity or stop it up by filling the most narrowed part of the canal at the external or internal os.

A similar obstruction is formed by a fibrous polypi that starts from the walls of the cervix. This distends the cervical cavity so that the walls surround the tumor more tightly, and thereby the lumen of the cavity is diminished, though in such cases the softening of the walls of the cervix causes the latter to be less tense. Yet the very fact that the cervix is diminished would alone render conception difficult.

When the neoplasm has advanced, even if confined to one wall, the cervical canal is mechanically stopped up, and if ulceration has once begun the corrosive fluid will exert a deleterious influence upon the sperma.

The frequency of unnatural growths that lead to barrenness is not great. It seems that the polypoid excrescences form the

majority of them. I recall the case of a mare, where they tried for eleven years to get her with foal, but failed. After close examination I found that an unnatural growth, the size of a large rose, was protruding from the cervix, leaving a small depression where the canal should be. The os externum was covered by the growth. After removing the growth, the mucous discharge disappeared and the mare became with foal. Another case was a cow that had great difficulty in delivering her calf, was considerably lacerated, especially the cervix, and partly retained the placenta, which caused a corrosive fluid for months. A fibrous polypi developed, which protruded through the cervix.

I do not wish to weary you with a long discussion upon local affections. Just a word about barrenness in high-bred heifers, that receive the best possible care and are prized very highly for their offspring, but fail to propagate. The question arises, but to answer it is a problem that has not been solved : Why does the rich man's wife fail to propagate?

The finely developed nervous system, the nutritious food, the great quantities of fat, and lack of sufficient exercise and fresh air act as an important factor in barrenness. From my observation, the nutritious food fed to those animals causes an increase in the flow of blood to the parts in question, which causes an acid discharge from the mucous membrane, which in normal conditions would be neutral. Out of eleven cases, eight were acidulous. This condition is deleterious to the spermatozoa. I trust that these few remarks may evoke a general discussion of this subject, and so aid in giving us the correct pathology of the conditions that cause barrenness.

PENNSYLVANIA PRACTITIONERS.—In the State of Pennsylvania there are registered 1700 names as licensed veterinary practitioners ; but 1000 of these do not practice (having died, moved away, or are pursuing other vocations), and of the remaining 700, about 320 are graduates. It is proposed to have a new registration, so as to sift the names down to those who are actually engaged in veterinary practice.

SOME WOUNDS OF WAR.

BY COLEMAN NOCKOLDS, M. D., V. S., VET. 1ST U. S. CAVALRY,
BATANGAS, P. I.

(Continued from page 516.)

Gunshot wounds may be divided into two classes, simple and complicated. In either kind the primary symptoms are fright, haemorrhage, pain and shock. The animal is always frightened, but there may not necessarily be any visible bleeding. It is quite possible that death may occur quickly from internal haemorrhage from the division of some of the larger abdominal or thoracic blood-vessels and yet not have any perceptible sign of bleeding from the external wound or wounds; sometimes a large amount of blood escapes into the subcutaneous tissue without gaining exit, but these cases rarely die at once from loss of blood. Again, the larger trunks of the neck or limbs are sometimes cut through and the animal succumbs before the surgeon has time to prevent the animal bleeding to death; this is especially true in the case of a nervous animal, rendered more so by the accident, so that it is impossible to attend the wound until the animal is secured in some way, and dies whilst being placed in a convenient position. Pain is a result of injury to the nerve trunks and fibres, and the degree depends upon the extent of damage done by the missive. If a large nerve trunk has been divided, the parts which receive sensation from that portion of the nerve which is divided are more or less numbed, and after the first sharp pains due to cutting of the nerves, the part struck and immediate vicinity lose sensation, thus deadening the pain. When there is much laceration, as is often the case when the wound is received from close range, there are great possibilities of septic infection from mangled tissue. The most painful wounds are those in which bones become fractured and the fragments are driven and press against nerve trunks. This is also the case when foreign bodies act in the same manner. The pain caused by a clean-cut wound from a small calibre modern bullet is comparatively insignificant, un-

less as in instances mentioned above. Shock is always apparent, the animal trembles, pulse becomes small and fast, cold perspiration bedews the body and there is extreme nervousness. Loss of blood will cause shock ; in some instances the shock received from a bullet, especially of the old type and at short range, although no vital spot is injured, is sufficient to cause death. Hæmorrhage from lacerated wounds is never alarming unless some large trunk has been severed. When a large trunk has been punctured by a modern small-bore bullet, it leaves two shreds joining the ends of the vessels, which prevent retraction of the cut extremities, and profuse hæmorrhage is the result. Wounds of the brain, spinal cord, heart and the larger internal vessels are rapidly fatal. Piercing the lungs or abdomen, provided no large trunks have been severed, is not rapidly fatal or of necessity fatal at all.

TREATMENT OF GUNSHOT WOUNDS.

All that is necessary with simple wounds where the bullet has passed out and no signs present of a foreign body having gained entrance, is to disinfect the skin at and around the wounds of entrance and exit and occlude the openings by means of dry, sterile absorbent dressing, which should be kept in place if possible by bandages, or some other appliance that will answer the purpose. Complete rest and quietude is imperative, and a nice light diet. Do not probe or interfere with the wound under any consideration ; it offers an increased risk of contamination. As an example of the evils of probing is the following :

I.—A horse belonging to troop "K" of my regiment received a wound through the fleshy part of the thigh from a .38 calibre Colt's revolver. It was treated by thoroughly cleansing the wounds and their vicinity with a weak sublimate solution, and pads of oakum were applied and held in place by bandages and leather straps ; as the animal was suffering from slight shock at the time, immediately after the wound was received a dose of aromatic spirits of ammonia was given. With the exception of a slight swelling surrounding the wound, there

was nothing to show that the animal had been wounded, the temperature, pulse and appetite remaining normal, and was returned to duty three weeks after injury.

II.—A horse belonging to troop "I" of my regiment, received a wound through the lower third of the muscles of the arm from a Remington ball; at that particular time the wound was plugged with a clean gauze bandage and sent to the rear, where unfortunately the wound was probed (for what reason I cannot imagine), and the animal is still (six months after) on sick report at my hospital, having suffered continually from successive abscess formation, the result most probably from septic infection received from instruments at the first dressing, as it is next to impossible with the appliances which are provided for veterinarians, to keep probes and other instruments clean in the field.

In my experience probing has always been followed by bad results, and the less a clean cut gunshot wound is molested, even if the bullet is still in, the better.

There are several horses in the 1st Cavalry carrying bullets in wounds that have healed without any complications and are doing regular duty. Of course this statement applies to uncomplicated wounds, but even simple wounds, when it is suspected that they have been caused by spherical balls, should be examined for foreign bodies. In those wounds where the larger or essential bones have been fractured, it is advisable to destroy the animal; the best and most humane method that I have found after a good many experiments, is to shoot. A bullet from a .38 calibre Colts is large enough; hold the end of the barrel close to the centre of the parietal, so that it points towards the base of the brain; with the left hand steady the animal's head by grasping the halter. Death is always instantaneous, there rarely being a movement of the limbs after falling.

When wounds are complicated by splinters of bone, or if there is good reason to believe that a foreign body other than the bullet has entered, then explore. Previous to the examination the hands should be thoroughly washed with soap and wa-

ter (warm water if practicable), then rinsed in a solution of carbolic acid 1-20. The instruments should be sterilized. Cleanse the wound and skin immediately surrounding it. If possible use the fingers; this is the best method of determining the extent of damage and the situation of splinters, or other foreign bodies, and the extent of fracture if the bone has been broken. To do this the holes made by the bullet if of a small bore must be enlarged with the knife. There are various instruments made for the detection of bullets; none answer the purpose for the veterinarian better than the probe with a rough porcelain point, except, perhaps, some form of one of the many electric bullet detectors, which is unobtainable at present by the army veterinarian. They are all made on much the same principle, and consist of a probe composed of some insulating material, containing two conducting wires, the points of which can be made to protrude at the end of the probe, but are separated from each other by a short interval about one-sixteenth of an inch; the conducting wires are connected with a small battery, with a bell or galvanometer; the contact of both wires against a metal, as a bullet, completes the circuit, which is indicated by the ringing of the bell, or movement of the galvanometer needle. The porcelain-pointed probe, when it comes in contact with the bullet, receives a mark from the lead; then there are the probe nippers so constructed as to bite off a piece of the bullet. Of course, either of these are useless as regards the steel jacketed missile, so that it is necessary in many cases to depend entirely upon the sense of touch. Having located the bullet, splinters or foreign bodies, the next step is to remove them, which is usually done in the case of larger bodies with the bullet forceps.

The bullet forceps supplied to army veterinarians are single hooked tooth forceps and useless except the ball is very superficially situated. Splinter forceps are useful for grabbing the hard-coated bullets and pieces of bone and wood; there are many varieties of bullet forceps, those made after the style of the Vulsellum are very useful; the French army bullet forceps are suitable for the removal of modern small arm projectiles, they are

shaped something after the old midwifery hinge forceps, somewhat resembling splinter forceps, only stronger and heavier.

The entrance wound will always have to be enlarged for the thorough securing and extraction of the bullet. The handling of the forceps requires gentleness and firmness, and care must be taken not to open the forceps before the bullet is reached for fear of squeezing and injuring the already lacerated tissues. If after the bullet is grasped, it seems that undue force is necessary for its removal, very probably some tissues are enclosed with the bullet on the forceps, or it may be that the bullet is deformed and entangled on the softer structures. Very often it is advisable to desist from attempting the removal of the bullet, which will become loosened after a time and can be removed without difficulty. The other foreign bodies should be removed and the wound thoroughly irrigated with an antiseptic solution of corrosive sublimate, creoline or other germicide. Large vessels that are broken should be tied; if this is impossible, and there is much haemorrhage, the wound must be plugged with oakum or other suitable material, but only plug when absolutely necessary.

The skin wound should be covered with a dry absorbent of gauze or wool, and the sides approximated being gently compressed by a well adjusted bandage, always providing suitable drainage for cases of complicated shot wounds. Drainage is not necessary for well dressed simple wounds.

Often in the field all that can be done is to ligature broken vessels, or plug the wounds and apply dry dressings until a favorable opportunity presents itself and suitable appliances are at hand. Quite a large number of wounds that have dry dressings applied to them in the field, heal readily without further complications, being dressed in the usual way after animal has reached the proper hospital.

Secondary haemorrhage should be treated with the actual cautery, or if practicable to ligature the main vessels from which the blood comes by pressure.

After suppuration has become established, the wound must

be laid open as far as practicable and thoroughly flushed out with antiseptics and suitable drainage established. General condition of patient must be attended to. Hygiene, good food and whatever medication is indicated. Bolo wounds may be either clean cut or punctured. Clean cut wounds should be treated by irrigation, ligaturing the vessels, and drainage ; a horse is not as liable to suffer from the intense shock observed from gunshot injuries, but if similar symptoms present themselves, they must be met in the same way. Very often it is advisable to suture wounds caused by sharp-edged weapons. Punctures and wounds from arrows are more troublesome to treat. Of fourteen horses that received punctured wounds from native weapons during the same week, I tried various methods of treatment, but finally was obliged to open them all freely and provide for drainage through the tissues, from their bottom downwards, which was done by tape setons ; in all the cases the swelling was excessive and gradually spread, perhaps due to some poison contained on the weapons ; it was many weeks before recovery took place. In some cases the wound was upon the hip and drainage was established downward through the inside flank. They all tended to become worse until free exit was made below the bottom of the wound for the pus. Sometimes a wound from a stab does well and recovers even when upon the back from dry dressings, only provided it is kept clean. Punctured wounds, whether produced by bayonet, sword, spear or arrow, require special care. If there is much haemorrhage, the puncture must be enlarged, and vessels secured, clots turned out, thorough irrigation with antiseptic solutions, finally packing with gauze, preferably iodoform, and dusting the outside with antiseptic powder. All wounds should be covered to prevent possible infection from flies and other agencies ; this is especially true of wounds in the tropics.

Owing to an outbreak of rabies in Rhodesia the native commissioner met the native chiefs, and explained the disease to them. They promised to destroy all dogs except favorites. This means the destruction of from 60,000 to 80,000 dogs. The government will destroy the hyenas.

REPORTS OF CASES.

"Careful observation makes a skillful practitioner, but his skill dies with him. By recording his observations, he adds to the knowledge of his profession, and assists by his facts in building up the solid edifice of pathological science."

SUCCESS IN THE TREATMENT OF PARTURIENT PARESIS.

By W. N. BABCOCK, V. S., Scott, N. Y.

Upon reading the article under heading "Reports of Cases," by John J. Repp, in September issue of REVIEW, of "Parturient Paralysis Prior to Parturition," and the fatal termination, I am inclined to record my experience in a very similar case, and the recovery.

Subject.—A pure bred Jersey cow, seven years old, very fleshy, heavy milker, and expected to calve for a day or two. She was on pasture, but for a few previous days had been kept in stable out of sun. On Aug. 20th they commenced milking her. On the 21st found her down and unable to rise. The owner at once sent for me, and I arrived about 8 o'clock A. M.

Observations and Treatment.—The cow was lying on her sternum and all her efforts to rise were unsuccessful. Temperature $103\frac{2}{3}$, pulse 70, respirations 20, with stertorous breathing; muzzle dry, udder pliable; no milk in udder; some curve of neck; consciousness and sensation impaired; often throwing her head on floor.

Never having a case of parturient paralysis before parturition, I made examination for that, but found the os not yet begun to dilate or proper presentation of foetus. I attempted to give medicine for dilatation and found throat paralyzed. I then made a diagnosis of parturient paralysis. I prepared my medicine after the formula of Veterinarian J. C. Callander, in the February number of your valuable journal, and every two hours between the doses gave Buntin Drug Co.'s hypodermic tablets of ergotin, for dilatation of os. Gave Schmidt's treatment at 10 A. M. and 6 P. M. At 9 P. M. made examination and found system relaxed, but foetus lying upon its back. After some manual labor, succeeded in making delivery; then changed ergotin for strychnine sulphate, $\frac{1}{2}$ gr., every four hours; used catheter and emptied rectum; had an attendant watch with her through night, turning her once.

At 5 A. M. found patient brighter; would take a swallow of water, and show appearances of consciousness. Gave the third

and last dose of iodide treatment. At 1 P. M. visited patient, and with a little slap with my hand on her rump and a word to "get up," she sprang to her feet, but was so feeble and weak she could only stand a few moments. Convalescence steadily followed, the after-treatment being four doses daily of strychnine tinct., $\frac{3}{i}$; taraxicum tinct., $\frac{3}{iv}$.

I treat from eight to ten cases in the year, and have not lost my first case since I have used Veterinarian J. C. Callander's formula, with the added carbolic acid and glycerine. I disinfect the udder with zenoleum, which I find a superior article, and for all the other medicines used, would recommend Buntin Drug Co.'s soluble hypodermic tablets.

I can join with brother Callander in saying: "It is a pleasure rather than a dreaded task to be called to treat the cases of parturient paresis."

MORE GOOD RESULTS FROM GLYCO-HEROIN (SMITH).

By A. JASME, V. S., Savannah, Ga.

My interest in articles published in the REVIEW relating to the treatment of coughs with glyco-heroin (Smith), led me to try it in my practice. For the benefit of your readers, I beg to submit these few cases:

I. Small polar dog, shipped in boat from New York, arrived twelve days ago; has laryngitis; cough very distressing; does not eat. Glyco-heroin (Smith), and glycerine, $\frac{aa}{ii}$ $\frac{3}{i}$; teaspoonful four times a day. Cured in four days.

II. Mule, double pneumonia, cough very painful, and almost continual; no chance to recover; taken sick three or four days before sent to hospital. Gave glyco-heroin every two hours (one ounce). On next day, cough nearly gone; patient ate some; died at the end of the third day, but the beneficial action of glyco-heroin was clearly manifested.

III. Setter dog, distemper, breathing very difficult, nasal discharge, thick and closing nostrils. Improvement in breathing and character of nasal discharge began next day. Dose given, teaspoonful every four hours.

IV. Horse, broken wind. Glyco-heroin (Smith), Oii; daily dose of four ounces improved cough; ordered again Oii, and gave daily 8 ounces. Although some improvement was noticeable, the owner did not desire to continue any longer.

V. Mare, four years old, distemper; sent to hospital in bad condition; cough and breathing most distressing; a case likely

to require tracheotomy, unless promptly relieved. Gave two ounces at 9 P. M., 12 and 4 A. M.; continued during the day one ounce every two hours; improvement was rapid and on next day gave it in two-ounce doses in wet bran.

VI. Horse, property of an M. D.; pharyngitis of three days standing; nasal discharge. One ounce every three hours was prescribed, and one pound completed the cure.

I have given glyco-hetoin (Smith) in other cases in the dog, and do believe it valuable in veterinary practice. It is easily given to the horse either by means of a syringe, or in the food. I find half to one teaspoonful every three hours sufficient for ordinary sized dogs, and in the several cases under my observation have always found improvement on the next day.

DEATH OF NOAH CRESSY.—This well-known veterinary surgeon and editor of the *Connecticut Farmer*, died suddenly at his home in Hartford, Aug. 31. Dr. Cressy had been in poor health for about two years, with kidney trouble, and an operation, which gave him temporary relief, had been recently performed. He was 63 years old. He taught school when a young man, then took a course in the Harvard scientific departments, and graduated as a physician at the Pittsfield Medical College. After practicing 12 years he became lecturer on bone diseases at Wesleyan College, Middletown. He became interested in veterinary medicine, studying that specialty on his own account, and did some work for the State government, finally being appointed State veterinarian. He taught veterinary science at Amherst Agricultural College. After remaining in Amherst two years he went to Montreal, where he completed his study of veterinary medicine. After lecturing at various points, he went to Hartford and opened a veterinary drug store, which he continued to conduct until he bought the *Farmer*, after which he practiced but little.

THE NEW BOARD OF VETERINARY MEDICAL EXAMINERS OF MICHIGAN, which assumed office Aug. 1, is as follows: Dr. H. M. Gohn, of St. Johns; Dr. H. F. Palmer, of Detroit; and Dr. H. C. Wann, of Claire View. This board can be relied upon to represent the profession of Michigan, which has never been the case since the creation of an examining board.

DRS. D. C. BURNETT and T. B. Pote, of the inspection division of the Bureau of Animal Industry in St. Louis, attended the evening session of the Missouri State Veterinary Association, Aug. 18.

EXTRACTS FROM EXCHANGES.

FRENCH REVIEW.

By Prof. A. LIAUTARD, M. D., V. M.

STRANGULATION OF THE SMALL INTESTINE BY AN ABDOMINAL LIPOMA [*G. Petit*].—Ordinarily the tumor develops on the sub-lumbar region, under the peritoneal serous membrane; then, when its weight has reached a certain degree, it drops downwards in the abdominal cavity, hanging by a peritoneal fold, which is liable to twist round the intestine and give rise to a fatal strangulation. Again, the peduncle may give away and then the lipoma, being free, undergoes in the abdominal cavity changes which end in calcification. In the case recorded by the author, the lipoma weighed 155 grammes, and was as big as a man's fist. It has the shape of a heart, rounded, and gives, on its notched base, attachment to a narrow band, strong, about 10 centimeters long, and is inserted on the iliac portion of the intestine. There is no rupture of the mesentery, and it is probable that the strangulation has occurred by a sudden movement in which the tumor was thrown round the origin of the ileum, which it surrounds like a necktie, in passing the extremity of the intestinal loop, and being prevented from resuming its former position.—(*Bullet. de la Soc. Cent.*)

CANCROID OF THE CLITORIS [*M. Naudin*].—The mare subject in question has at the lower part of the vulva, a growth which since it has made its appearance, about a year ago, has enlarged and is now spreading on the lips of the vulvar opening. At present, the vulva is covered by a mass, big as two fists, slightly trilobulated and attached by a short peduncle, which permits it to hang down on the perineum. The peduncle and the surrounding parts of the vulva and perineum are of scirrhouss consistency. It spreads gradually and expands irregularly, forming an irregular, bosselated, granulous mass, giving the tumor the aspect of a cauliflower or of a large papilloma. It is covered with numerous ulcerations, secreting sanguous pus of bad odor and quite abundant, which soils the perineum and the internal face of the legs. The lymphatic glands of the sub-lumbar region are hypertrophied and hard. The tumor was excised with bistoury and hemostasis made with the thermo-cautery. The growth weighed 400 grammes. Examined under

the microscope its nature was made out—cancroid ; it resembled similar growths which are observed on the head of the penis of the horse, although they are less frequent in mares. This last is probably the largest on record.—(*Rec. de M. Vet.*)

VENTRAL HERNIA—SUTURE OF THE RING—RECOVERY [*Prof. Peuch*].—Filly, twenty-two months old, received a blow with a horn in the right hypochondriac region ; a ventral hernia follows, which is soon as big as the fist. The animal was treated for six months by an empiric, who resorted to bandages without result. At last brought to the clinic of the author, she was cast, chloroformed and operated upon. The hernia first reduced, an incision eight centimeters long is made through the skin, the sac is opened, the edges of the hernial ring are brought together with silk suture. Only one stitch was applied. The skin was closed by the application of a curved clasp. There was no complication, but the recovery was incomplete, as the difficulty of applying more than one stitch on the hernial ring prevented its complete occlusion.—(*Journ. de Zoötechnie.*)

NECROSING AND INFECTING PUNCTURED WOUNDS OF THE FOOT [*Prof. Cadéac*].—Aside from all considerations relating to the seat, the severity of a penetrating wound of the foot is given by the rectal temperature. Its elevation is in proportion to the extent and intensity of the infection produced by the wound. At times the puncturing nail acts as a necrosing traumatism, aseptic or scarcely suppurating, at others on the contrary it is the inoculating instrument of pyogenic and septic germs. A temperature reaching 39° or passing it, indicates deep and serious infection. Apyretic street-nail wounds justify local anti-septics and recover quickly. Wounds with slight hyperthermia are slightly suppurating ; their recovery is easily obtained by ordinary means ; they never assume great severity ; with them the inflammation remains localized and gives rise to no secondary complications ; those wounds are necrosing. But there are wounds which from the start show exceptional severity, with elevated hyperthermia and general symptoms telling of a general infection. Then, early and complete surgical interference fails in arresting the complications of septico-pyohæmia, which are likely to occur and often end fatally. These wounds are the infecting ones ; they are specially dangerous and for the different prognoses which belong to them demand to be properly diagnosed.—(*Journ. de Zoötech.*)

RESISTANCE OF THE HORSE TO VIOLENT TRAUMATISMS [*M. Brocq. Rousseau*].—These two cases are published by the

author to show the great resistance that horses can show against severe injuries. The first case is that of a mare which has been injured and received back of the left shoulder a wound with irregular, ragged borders. It was said that the animal in running away had come in contact with the shaft of another wagon. The general aspect of the mare suggests the idea of an internal haemorrhage going on. The animal dies in the evening at 10 o'clock. At the post-mortem the 8th and 9th ribs are found fractured, the left lung run through, as well as the diaphragm; the stomach was perforated and with considerable of intestines had entered the thorax. Injured at about 8 A. M., and notwithstanding all her injuries, the mare was able to walk four kilometers and lived for twelve hours. The second case is that of another mare, also run into and thrown down by another wagon. She has two wounds, one on the left hip, the other on the right rump. It is said that the shaft of the wagon has run the mare right through. Rectal and vaginal examination shows that indeed the shaft has entered the left flank and come out at the right. With this condition the mare was walked home, a long distance, with no difficulty in her movements, and did not die for twelve hours afterward.—(*Rec. de Med. Vet.*)

QUADRUPLE GESTATION IN A COW [*M. H. Delaunay*].—A six-year-old cow has had three calves in three years, but her last pregnancy was more successful. Covered by a prize bull, pregnancy went on well until the eighth month, when, while eating well and plenty, she was observed losing flesh more than usual. Towards the last ten days of her pregnancy she refused all food and took only molassed water. At last she showed signs that her time was coming. Towards twelve o'clock one day she had one calf, which was followed after every half hour by another, until she had four. The whole delivery lasted one and a half hours. The four calves were all female, living, well formed, and weighed in the average 19 kil. 500. The cow did not seem disturbed by her condition. One of the calves was killed in the evening, as it seemed quite weak. The others went on well.—(*Rec. de Med. Vet.*)

ITALIAN REVIEW.

By Prof. A. LIAUTARD, M. D., V. M.

BOVINE CISTICERCOSIS [*Dr. Garibaldo Lisi*].—After referring to a long article published recently in the *Moderno Zoëia-*

tro, the author, who is attached as director of the market of Carrara, records four cases of unusual parasitic infection which came under his observation. In the first the parasites were found in every part of the body. The muscles of the head were much involved. The tongue contained fifteen cysts, four of which were calcified. The epicardium, endocardium and myocardium were filled with them, some living, others calcified. The lungs, liver, spleen, kidneys, eyes, brain and the lymphatic glands were not free from them. The muscular coat of the stomach contained two cysts. In the second, the infection was not less, but the muscular tissue of the heart, those of the head and tongue principally. Some ten of the parasites were found in the lungs, two in the walls of the rumen, four in the muscular coat of the cesophagus. They were also found in the liver, spleen, the spinal cord. The diaphragm was covered with them on its whole extent; two were found on the peritoneum. In the third the cysticerci were found in great numbers in the head and neck, the rumen, the cesophagus, the diaphragm, the psoas muscles, as well as in the thoracic and abdominal organs. The fourth was less diseased. Two cysts only were found over the epicardium, one in the tongue and one in the external masseter.

—(*Clinica Veterinaria*.)

AMAUROSIS FROM TUBERCULOSIS [*Dr. Funragalli Arnaldo*].—The owner of a seven-year-old steer had remarked that since some time this animal had shown some difficulty of sight, and that finally he seemed to be entirely blind of the right eye. In being approached he appeared ambragious, and pushed to a corner of the yard, knocked himself against a fence. On examination, the pupil is found enormously dilated and remaining without contraction when brought from strong light to obscurity. The ophthalmoscope revealed a partial laceration of the retina. Treatment being unnecessary, the animal was killed. At the post-mortem diffused tuberculosis of the lungs and liver were exposed, and finally by careful dissection of the head the cause of the amaurosis was made out, both nerves being examined minutely. The left nerve presented nothing abnormal. But in the right, at a small distance from the entrance of the nerve into the eye, there was a small enlargement, which was carefully removed. The portion of the nerve forward of this was atrophied and degenerated, while that posterior to the origin of the nerve was normal. Towards the ring of exit of the nerve there were observed small tubercles, partly calcified and involved in the cellular tissue which forms a great portion

of the ring. The retina was degenerated and partly lacerated. The bacillus of tuberculosis was found in the small tubercles by microscopic examination and their inoculation to guinea pigs developed the disease.—(*Clinica Veterinaria*.)

SEROUS CYST OF THE LEFT LIP OF THE VULVA IN A COW [Dr. Alfredo Miniardi].—After passing a brief review of the various modes of treatment of serous cysts, and short remarks on their advantages and objections, the author, accepting the extirpation of the walls of the cyst as the most satisfactory, alludes to the method of puncture followed by injection of irritating fluids in a favorable way and gives it precedence over extirpation, which is kept as the last resource, and records the following case to support his opinion. A six-year cow had for five months had a tumor on the left side of the vulva. It has grown to somewhat troublesome dimensions and interferes with micturition. Otherwise the animal seems in perfect health. The tumor is large, painless and fluctuating. The introduction of the hand through the genital organs is difficult, but by pressing from inwards outwards with the palm of the hand one can judge pretty well of its size—about that of two fists. Exploratory puncture revealed its nature. The cavity is then emptied with a large syringe of Pravay and an injection of a cold solution *de fenolo* at 5 per cent. introduced. The cavity distended was well massaged and the contents again removed by aspiration. The after treatment consisted in slight frictions of tincture of iodine. Quite a serious inflammatory process followed, but the swelling gradually diminished and recovery was completed in a few days later.—(*Clinica Veterinaria*.)

NOTES OF PATHOLOGICAL ANATOMY [Dr. Garibaldo Lisi].—*A Guinea-pig which Recovers from Rabies*.—June 9, 1899, with the brain of a rabid guinea-pig, immersed for six days in neutral glycerine, another pig was injected in the anterior chamber of the right eye. September 20, the animal presented light symptoms of paralysis, which had so increased in twenty-four hours that he could not move. On the 22d, however, he seemed to be somewhat better, especially on the hind legs, which have partly recuperated their power of motion. On the 23d, the improvement has continued and the animal, much better, is entirely recovered by the 25th. *Cerebral Tumor in a Cow*.—The owner of the animal reported that nothing abnormal could be found with his cow. She ate and ruminated well and was perfectly quiet while in her stall, but as soon as she was brought out, she would rush forward, careless of any obstacle in front of

her. To convince himself of this, she was brought out, when she started running ahead until she fell down and was secured. Although *cœnurus cerebralis* was suspected, the examination was carried further and the symptoms observed justified a diagnosis of tuberculosis, tubercles being found in the lungs, pericardium and glands of the thorax. On looking at the brain, on the pons varolii, a tumor as big as a hazel-nut was found, which had a sarcomatous aspect. It was examined microscopically, which revealed it made of numerous giant cells with various nuclei isolated in some places and in others united in the centre.—(*Il Nuovo Ercolani*.)

A CASE OF GUTTUROMICOSIS IN THE HORSE [*By Prof. E. Nazzanti*].—Under the name of gutturomycosis Rivolta has designated an ulcerative affection of the guttural pouches, due to a fungi which he has named *gutturomyces equi*. He has observed this affection in two horses. Bassi in 1881 found it in one horse and in one mule. Nazzanti has observed another which presented the same symptoms and the same lesions. A six-year-old horse is suffering with dysphagia, no fever, general condition bad, and much dullness. He has stomatitis, and much heat of the left parotid region is present. The treatment prescribed remains without result, and the third day of the observation he dies by severe dyspnoea. At the post-mortem the left lung was found to be the seat of a haemorrhagic congestion, and the left guttural pouch that of characteristic lesions. The mucous membrane was tumefied, dark in color, almost black and covered with muco-pus. In the bottom of the guttural pouch, near the stylo-condyloid space, there were three patches with irregular borders, two having the size of a ten-cent piece, the third as large as a big penny. These patches, slightly elevated and with undulated surface, in some places rather loose, had a diplitheric aspect and were of a greyish white color. In them, besides ordinary bacterias and inflammatory products, there was found the mycelium and the spores of a fungus that the author compares to the *aspergillus fumigatus*. Considering the process of the disease, he admits that it has started by an attack of aspergillas stomatitis, then under the influence of a severe local treatment, it has left the buccal cavity to reach by continuity the guttural pouch. The author also believes that the dysphagia cannot be attributed to the irritation of the ninth pair, which was found intact, but that it is due to a mechanical influence belonging to the soreness caused by the inflammation.—(*Il Veterinaria di Campagna*.)

OBITUARY.

RUDOLF LUDWIG KARL VIRCHOW.

At Berlin, Sept. 5, this world-famous bacteriologist, pathologist, and statesman passed away, his vital powers having been gradually failing since a serious illness in a street-car accident. His loss will be profoundly felt wherever medical science is cultivated, for, as the New York *Medical Journal* aptly puts it, "of all members of the medical profession of whom persons now living can have any personal remembrance, he was beyond peradventure the foremost, whether we regard the profundity of his researches, the lucidity of his expositions, or the diversity of his achievements in science."

Virchow was born in Pomerania, in 1821. Hardly had he received his medical degree when, as Froriep's assistant in Berlin, he entered upon pathological investigations of such brilliancy that very speedily, in 1847, he found himself so highly appreciated by his professional brethren as to be able, in conjunction with Reinhardt, to establish a new journal, the *Archiv für pathologische Anatomie und Physiologie und für klinische Medicin*. Reinhardt died in 1853, leaving Virchow to conduct the new journal alone, which he did up to the time of his death. Of late years it has been customary to speak of it as Virchow's *Archiv*. It has always occupied in our periodical literature a singularly high place in the appreciation of the medical world; a set of it is almost a library in itself. That one man should have been its editor for so many years—more than half a century—and kept it unwaveringly true to the labor of achieving real progress in medicine, never misled by false ideas, however alluring, never according to the plausible the weight that properly attaches only to the tried and proved, is a monument to the severity tempered with tolerance, with which Virchow rated men and their doings.

His early career was checkered by the part he played in the political disturbances of 1848. In consequence of his having proclaimed himself a Democrat, he was forced from his position in Berlin and betook himself to Würzburg, where he was made a professor. It was not until several years later, in 1856, that he was recalled to Berlin, and even then it was only the determined interposition of various medical organizations that led to his recall. He was then made professor of pathology in the University of Berlin, and it was not long before he made himself felt

in politics in spite of his previous disfavor with the government. He was one of the founders of the Progressive party, and for years he was an active participant in the deliberations of the Landtag and the Reichstag, besides contributing materially toward bringing about municipal improvements in Berlin.

Though he did not often contribute to his own journal, Virchow was a copious writer. Doubtless his most important work was *Die Cellularpathologie*, which appeared in 1858.. Chance's English translation came out in 1860, and Picard's French version in 1861. The theory enunciated in this great work was the nucleus around which the substantial progress made in pathology during the second half of the nineteenth century crystalized. A less striking work, but one of enduring value, was his *Die krankhaften Geschwülste*, published in 1863-'67.

Virchow's industry was no less remarkable than his versatility, whether investigating leprosy for the Norwegian government, studying an epidemic of typhus in Upper Silesia, or subjecting Schliemann's discoveries to analysis, he was always at work. Probably it was the very diversity of his pursuits that preserved his intellect unimpaired to the last. He was seventy-one years old when his *Crania ethnica americana* appeared, and even later than that, in his *Archiv*, he gave a masterly exposition of his antagonism to the new spelling that, according to his view of the matter, the schoolmasters had sought to impose upon the German people.

But it was not in criticism or investigation alone that Virchow was strong. His oral teaching, continued for so many years, gave to many a man the mental cast that enabled him to work at his best. The master works through his pupils as well as in his own acts, and Virchow had been the master of a multitude of those who afterward contributed notably to the increase of our knowledge. His personality, too, counted for much, as anybody who ever came face to face with him will testify. Indeed, medicine has lost a giant.

JOHN M. PARKER, D. V. S.

Word reaches us through Dr. J. F. Winchester that this well-known veterinarian died in South Africa on Aug. 21, but as yet we have not heard particulars as to the cause or duration of illness. In the September REVIEW we published a long and most interesting article from his pen upon the subject of "Rin-

derpest," which was in the nature of a compilation of the history of the efforts made to immunize cattle against the great scourge, and we had expected that the doctor's great energy and studious mind would have given us much more along this line. But it was willed by a higher power that he should be cut off in the zenith of his manhood and professional ability. He was just thirty-nine years old at the time of his death, but he had crowded much into his short life. He was a Scotchman by birth, but came to America when quite young, had become a naturalized citizen of the United States, and graduated from McGill University somewhere in the eighties. He located at Haverhill, Mass., where he married, and engaged in private practice. As his first child was born its mother succumbed to the ordeal, and he was left to mourn for his young wife, which he did most sincerely, never marrying again. In 1896 he became a member of the Massachusetts Cattle Commission, serving as its Secretary until the number of Commissioners was reduced to three. Some three years ago he accepted a position with the British Army in South Africa, being connected with the Remount Depot at Worcester, Cape Colony, where we presume he died.

He was ex-President of the Massachusetts Veterinary Association, a member of the A. V. M. A., and a frequent contributor to veterinary literature through the professional journals and otherwise.

DR. COLEMAN NOCKOLDS, who is contributing so many valuable original articles on diseases and conditions in the Philippines for the REVIEW, says in a recent letter: "At the present time (June 27) there are three epidemics raging in Batangas Province, Luzon, P. I.: Cholera among Americans and natives (people), rinderpest among cattle and pigs, tetanus among American and native horses."

VETERINARIAN WITH HYDROPHOBIA SPARES HIS FAMILY.
—*Detroit, Mich., Sept. 25.*—Dr. George E. Metcalf, a well-known veterinary surgeon, was buried yesterday. While treating a dog four months ago the animal bit one thumb. Last Friday he became ill, and symptoms developed which left no doubt of the nature of the disease. Dr. Metcalf sent for his brother, and said to him: "There is no hope for me. All I wish is that you will take me away that my family may be spared the horrible sight, and that you stand by me until death relieves me." His brother sent him to Harper Hospital, and was at his bedside until the end came on Sunday, soon after he had lost consciousness and gone mad.—(*New York World, Sept. 25.*)

"THE OLD OAKEN BUCKET"—MODERNIZED.

By Dr. J. C. BAYLES, Former President New York City Board of Health; Read before the Fellows of the Academy of Medicine.

With what anguish of mind I remember my childhood,
 Recalled in the light of a knowledge since gained,
 The malarious farm, the wet fungus-grown wildwood,
 The chills then contracted that since have remained ;
 The scum-covered duck-pond, the pig-sty close by it,
 The ditch where the sour-smelling house drainage fell,
 The damp, shaded dwelling, the foul barnyard by it—
 But worse than all else was that terrible well.
 And the old oaken bucket, the mold-crusted bucket,
 The moss covered bucket that hung in the well.

Just think of it ! Moss on the vessel that lifted
 The water I drank in the days called to mind ;
 Ere I knew what professors and scientists gifted
 In the water of wells by analysis find ;
 The rotten wood fiber, the oxid of iron,
 The algae, the frog of unusual size,
 The waters impure as the verses of Byron,
 Are things I remember with tears in my eyes.

And to tell the sad truth—though I shudder to think of it—
 I considered that water uncommonly dear,
 And often at noon, when I went there to drink it,
 I enjoyed it as much as I now enjoy beer.
 How ardent I seized it with hands that were grimy,
 And quick to the mud-covered bottom it fell,
 Then reeking with nitrates and nitrites, and slimy
 With matter organic it rose from the well.

Oh, had I but realized in time to avoid them—
 The dangers that lurked in that pestilent draft—
 I'd have tested for organic germs and destroyed them—
 With potassic pumanganate ere I had quaffed.
 Or perchance I'd have boiled it, and afterward strained it
 Through filters of charcoal and gravel combined ;
 Or, after distilling, condensed and regained it
 In palatable form, with its filth left behind.

How little I knew of the enteric fever
 Which lurked in the water I ventured to drink,
 But since I've become a devoted believer
 In the teachings of science I shudder to think.
 And now, far removed from the scenes I'm describing,
 The story of warning to others I'll tell,
 And memory reverts to my youthful imbibing
 As I gag at the thought of that horrible well,
 And the old oaken bucket, the fungus-grown bucket—
 In fact, the slop bucket—that hung in the well.

SOCIETY MEETINGS.

AMERICAN VETERINARY MEDICAL ASSOCIATION.

The thirty-ninth annual meeting convened in the Assembly Hall of the West Hotel, Minneapolis, Minn., at 2 P. M., on Tuesday, Sept. 2, 1902, the hour assigned for the opening exercises (10 A. M.) having been postponed on account of the non-arrival of the "special veterinary train" from Chicago, with about 90 members, visitors and ladies, occasioned by the wrecking of a cattle train, which caused the "special" to be held up until the tracks were cleared. At the latter hour the large room was filled to its utmost capacity, all available standing room being occupied, the last two rows of chairs being occupied by about fifty ladies. President Winchester gave a sharp rap of his gavel, and declared the thirty-ninth annual meeting of the A. V. M. A. in session. After remarking upon the honor he felt in having the privilege of opening the largest veterinary convention ever held in America, and probably in the world, he introduced Mr. W. G. Nye, Chairman of the Entertainment Committee of the Commercial Club of the City of Minneapolis, who welcomed the Association to the city, performing this function in such a hearty manner that none could fail to feel that they were indeed welcome guests, for he said that he wanted them to feel that every zephyr which blew and every bird which sang, bade us accept the freedom of the city, an honor which is not extended haphazard, and really very seldom in recent years has this been done, although the city is the meeting place of many conventions. Further, he said the Commercial Club, composed of 1000 of the best business and professional men of Minneapolis, would keep its latch-string always hanging on the outside for members of the A. V. M. A., and he hoped they would pull it as frequently as they wished. He paid a splendid tribute to the local members of the veterinary profession, and showed by his intelligent discussion of veterinary topics that he is a student of current events, and conversant with the progress being made by our science.

Following Mr. Nye's splendid address, President Winchester called upon Dr. Roscoe R. Bell, of New York, for a response on behalf of the Association, which was done in a short speech, couched in appropriate words.

Dr. J. F. Winchester, of Lawrence, Mass., President of the Association, then delivered the following address :

PRESIDENT WINCHESTER'S ADDRESS.

*Gentlemen :—*It is fitting that I should first express to you my deep sense of appreciation of the compliment and honor you conferred upon me, when by unanimous vote you elected me to preside over this body. Fully realizing that it is the highest honor that can be bestowed upon an individual member, I assure you that I shall do my best to fulfill the duties of my high office as befits one who has the welfare of the profession very closely at heart.

The present and future success of this Association depends upon the members individually and collectively. We are numerically the largest association of the kind in the world, and it becomes the duty of the members to do their utmost to make the American Veterinary Medical Association the most influential in work and wisdom.

It is now two score years since the first gathering of veterinarians was held on this continent. That space of time marks an epoch in the life of man when he is ordinarily at the zenith of vigor of mind and body. It is not so with this Association, for its influence will steadily increase, growing grander and more glorious as the years pass by. Its prestige to-day is well shown in that the invitation to hold the meeting in this State was the most cordial one ever extended to it.

The veterinarians of Minnesota are to be congratulated upon having the Governor, the State Board of Health, the Mayor of this City and the Commercial Club so much interested in our profession as to extend individually to this organization the right hand of fellowship. In behalf of the American Veterinary Medical Association, I now thank the gentlemen representing the State and City Governments for the courteous treatment that has been offered us.

This Association was organized by about forty veterinarians in 1863, the year following the meeting held in Philadelphia, under the name of the United States Veterinary Medical Association. Since that time the scope of the work has so enlarged that the present name was adopted as indicative of the growth of membership. Through its encouragement and support a veterinary periodical was first published ; through its influence the course of study of veterinary medicine in most colleges has been increased to three years, and it is to be hoped that the same influ-

ence will cause the few two-year schools that remain to lengthen their period of instruction. There are to-day thirteen colleges graduating veterinarians eligible to membership in this Association, while only five remain that do not comply with our requirements.

As it is my opinion that the requirements of Article I, Chapter VI of our By-Laws have been instrumental in increasing the period of instruction in many colleges, I offer these suggestions: First, that all alumni from colleges now requiring three years' attendance be eligible for membership in this Association; second, that the graduates from colleges that within two years adopt a three years' course and otherwise comply with our requirements be eligible to membership.

As there are at the present time only five colleges having at least four veterinarians on their teaching staff, that do not require the three years' course of six months' attendance or more, I trust that the day is not far distant when the term for graduation for all colleges will be extended to four years. If it were a fact that all our three-year colleges were insisting on like qualifications for matriculation and graduation, with the anticipation of a four years' course in the near future, the confidence of the public would be gained.

This condition of affairs can be brought about by having the trustees of each college appoint delegates with power to act in the matter. The next step in order would be the selection of men of broad and liberal education, who are specialists in the subjects taught, to constitute the faculties of these schools.

This once accomplished, the requirements for matriculation of students in all the colleges being made equal, the results will be that in the near future all cities will have a veterinary health officer acting with the medical officers of health in controlling and preventing diseases; the public will cease to look upon the veterinarians as mere animal physicians and surgeons and will grant them the privilege of interpreting and administering laws relating to public health. We should use our moral influence to bring this to pass that every graduated veterinarian may sometime have the prestige due him.

The growth of this Association, and interest in it, is due to a great extent to its Secretary. His duties are many and arduous, but how few of us have for once stopped to consider them. On his untiring zeal and his ever anticipating the wants of this organization depends the success of our meetings and the interest taken in them.

In looking over the list of secretaries you will find that, with one exception, our present official has served us the longest, but bear in mind that with that exception from 1880 to 1888 the duties were very slight compared with those of to-day.

During the first years the membership was limited; notices of meetings were given in the REVIEW and the *Journal*, and the proceedings of the meetings were not published as at present. The time occupied was one day in September and March, New York City being usually the mecca in September, and Boston in March. There were but few papers read, the time being principally occupied in changing the By-Laws and discussing contagious pleuro-pneumonia.

Those of us who were members in the early days little thought that such a change would take place in this Association, for, as I have said, it is to-day the largest, numerically, in the world. The work having increased to such dimensions, our Secretary should have under his direction, as State Secretaries, men who are earnest and willing to serve. Before making appointments it would, in my judgment, be desirable to obtain from each man an assurance of his willingness to accept the office and assist in the work which properly belongs to it. Since the duties of the State Secretaries are not defined in our By-Laws, the Secretary should be provided with printed instructions, such as the Executive Committee may recommend, which he may send to the State Secretaries when notifying them of their appointment.

The suggestion has been offered that an effort be made to have the various State associations elect as members only such as are eligible to membership in this body, and then to have these various organizations endeavor to interest their members, that all may become associated with us. I deem this advisable, as in this way our membership would be increased and our influence greatly extended. Should the State associations carry out this suggestion how many new students would the two-year colleges matriculate?

It is now several years since a Prize Committee has been in existence, but I trust that before long we may again see the formation of that committee.

It cannot be said that original work is not being done on this continent. The interesting and valuable papers that are presented, not only at our meetings, but also at State associations, deserve more than a passing notice. Knowing what lit-

erary work our members have done without the hope of pecuniary gain, but simply from the desire to aid their profession, would not a prize offered by the Association serve to stimulate for the future those men who have already aided the Association and profession and at the same time be an incentive to others to interest themselves in such original work? While it is a fact that our profession offers opportunities second to none for the investigator, at the same time are not a great many of us taking conditions for granted that by the acts of nature resolve themselves without our knowledge of the cause?

In order to gain in wisdom and to benefit the country, the name of which we have assumed, what reason can there be why we should neglect to use our influence to induce our members to give to the world the results of their investigations? Let this Association decide on some method so that it may put its stamp of approval upon the work of its members.

You have caused the formation of a Committee on Pharmacopœia, the results of their labor to be the official work of this Association, and your President having made a very careful canvas of the membership to obtain the most eligible men to comprise the committee there is reason to believe that a body has been gotten together that will do its work thoroughly and reflect credit upon the Association.

The proposition that a committee be formed to formulate a standard of soundness of horses is good; in addition, I would suggest that a scale be made by which the excellence of an animal for service may be scored. Ordinarily the services of the veterinarian at exhibitions have been used in regard to soundness only, and his judgment has not been called for when scoring points of excellence.

The attempt to get a special act of incorporation through Congress, which resulted in failure, was made several years ago. It is now time to take up this question again, and if the consensus of opinion does not favor again trying in Washington, it may be well for the Association to apply for incorporation under some State law.

In the past few years the mortality and prevalence of infectious and contagious dermic and zoötic diseases have diminished. The reason for this is that the causes of the various disorders common to man and animal have been investigated and proven. It is well known that the causes of those diseases communicable to man vary in size from micro-organisms to parasites (if you will allow the comparison), and many of the

former do not necessarily belong to the living animal, being found in decaying tissue as well as in storehouses.

Recently the etiology of certain diseases that cause enormous loss in cattle has been demonstrated, and the immunizing of cattle has become a source of wealth to the nation. In this country, so far as I know, those insects that fly at night have not as yet been proven to convey diseases from one *animal* to another, though they do from man to man; nevertheless, it is known that flies become an active means of contagion among animals.

Tuberculosis, so well known to us all, and about which so much controversy has arisen, illustrates in my mind the best instance of a malady where hygiene and sanitation are the important factors in its prevention and treatment.

What seems to be the future work of the veterinarian is the *prevention* of contagious and infectious diseases. As in the past, the success that has been attained has been due in a large measure to sanitation; so must we look to that for future success. I would recommend that the Committee on Resolutions draw up an article on the practical value of hygiene. Such a resolution will undoubtedly receive the unqualified approval of the press.

In several of the States important laws have recently been passed which should greatly benefit our profession. I will refer to only one. Within thirty days the veterinarians of New Jersey were fortunate in having a law enacted regulating the practice in that State. This subject will be considered in full by the Committee on Intelligence and Education.

The profession protests against an injustice to a conscientious member on account of the profession, but who is to enter a protest against the veterinarian without personal integrity? There seem to be veterinarians ready and willing to lend themselves to schemes which will further their personal ends. Opportunism seems to be the guide for a great many, but my observation has been that such individuals are successful for a while only, for in the end those who make use of them turn against them and not only distrust them, but have not the best opinion of *the* veterinarian.

These conditions, which are potent to a great many, will, in my judgment, continue to exist if the cause for them is not removed. The lack of a broad education and of self-sacrifice are the evils which this Association should use its influence to eliminate. Morally the remedy is at our door, and a broad, liberal

education with self-sacrifice should be strenuously advocated. The beginning must be made when the applicant first raps at the door of our educational institutions and then continued by having teachers of the required calibre.

A period of instruction covering two, three or four years cannot offset this evil if the students do not always have before them the example set by broad-minded, self-sacrificing men of culture with whom they are brought in daily contact. Let it be borne in mind that the action of the opportunist is far-reaching and that his seeming opportunity reflects on the profession to such a degree that it will take a long time to correct the wrong done by him.

Throughout the world, among the liberal professions, there exists a feeling of community and of support. When injustice of any kind strikes one individual member, the entire profession protests regardless of any other sentiment. They protest against the wrong done, not because of the individual, but on account of the profession of which he is a member. Aside from this professional sentiment, the thought of material support has been overlooked in America by the philanthropists of our profession. It is well manifested by the veterinarians of England and France, and by the medical profession of New York State, being expressed by the support and assistance that the members render each other and their families when death or disability overtakes them.

England's National Veterinary Benevolent and Mutual Defense Society has a membership of two hundred fifty (250). It was organized to protect members of the veterinary profession against alleged depreciation of animals as a result of sickness, accidents or opinions honestly expressed in the discharge of their duty; and also to assist such members of the veterinary profession, their widows and orphans who might prove to be deserving of professional benevolence. The French association numbers nine hundred forty (940) veterinarians this year, against three hundred fifty-nine (359) in 1897. It has a fund of twelve thousand dollars (\$12,000.)

The New York Physicians' Mutual Aid Association, incorporated in 1868, had at the beginning of this year a membership of over fifteen hundred (1,500), with a permanent fund of forty thousand dollars (\$40,000). It gives one thousand dollars (\$1,000) to a member's family at his death and renders assistance in adversity during life. The actual expense per member for 1900 was eighteen dollars (\$18.)

Our Association can and ought to make a beginning that will before many years be of assistance and benefit to its members. Deeming this a subject of great importance for the future welfare of the Association, I would suggest that a committee be appointed to report immediately, so that definite action may be taken by the Association at this meeting.

The AMERICAN VETERINARY REVIEW, that journal to which our Association a quarter of a century ago gave its support, has steadily grown in influence, and to-day is a factor in the formation of opinions amongst the members of our profession. At its head to-day is the same man who took the burden of nursing it into life. A few years after the publication of this paper, in 1880, the *Journal of Comparative Medicine and Veterinary Archives*, so favorably known to us all, appeared. In order to succeed in any profession it is essential for us to keep in touch with the advance of the day; the press is the factor we must not overlook; it is the guide that blazes the trail to all professional progress.

In the past a great deal of our knowledge has come to us through the work of foreign schools. Has the veterinary profession of America been backward in supplying the world with new facts? I most emphatically say, No. Can any country show an equal amount of energy in dealing with contagious diseases? Can any country show such practical results in immunizing cattle by which an industry within our borders has been so revolutionized that it means untold wealth? Could this knowledge have become of such national importance without the aid of the press? Again I say most emphatically, No.

These are facts that are of great import to us as a body; and I, fully appreciating it, trust that each and every one will benefit himself and thereby the community of which he is a component part, by keeping in touch with the new thought as presented in our veterinary journals, remembering that added patronage increases the power of the press.

Death has made serious inroads in our ranks this past year. As our last meeting was being brought to a close the assassin's blow was struck which plunged the nation into mourning and took from us that staunch friend of the veterinarian, our beloved President of the United States, William McKinley. All nations mourned with us at the untimely end of that great and good man. The story of his life and death will forevermore be an undying example of how a citizen should live and a Christian gentleman may die. Well was it said of him, "No ten-

derer knight to his chosen lady ever lived ; ambitious, his sympathy made and kept friends ; persuasive in his arguments, by appealing to reason and intelligence, he had the confidence of all and his support was loyal." Never were his friends embarrassed by imprudent or unguarded statements, and such was his courtesy at all times, that his opponents never were offended.

John Faust, one of the oldest and most highly esteemed citizens of Poughkeepsie, N. Y., a member of our Association since 1884, died in the month of July, 1901. His death from general paralysis was indirectly the result of an injury received in a railroad accident about ten years previous. Born in Germany in 1835, he came to this country in 1852. Having learned the cooper's trade, he started in business with two brothers in 1859 at Poughkeepsie, N. Y. All his spare time was given to the study of our profession, and in 1875, the business partnership being dissolved, he devoted his entire time to the study and practice of veterinary medicine and surgery. His success was such that in 1881 the New York Examining Board issued a certificate to him. He served with credit as a member of the Board of Health for several years, and at the time when the question of tuberculosis was being investigated by the State, he was appointed by the Governor of New York as an inspector of cattle. He was the last member elected to our Association who by self-sacrifice had qualified himself. He prized his membership very highly and was seldom absent from our meetings.

On November 20, 1901, Thomas F. Barron, of Baltimore, Maryland, died from a complication of diseases, aged fifty-nine years. Following in the footsteps of his father, a self-made man, from his early boyhood he had devoted himself to his profession. He became a member of this Association in 1887 and was a constant attendant at the meetings. A close student, always a gentleman, he was never known to speak disrespectfully of any man.

December 17, 1901, occurred the death of one whose whole life was devoted to his chosen profession. Not only his untiring energy, but his fortune was contributed to bettering the condition and establishing the prestige of the veterinarian. To him belongs the honor of organizing the Veterinary Department of the University of Pennsylvania, and no one was better qualified to fulfill that trust ; having a liberal education and broad knowledge of man, he was always ready to give credit when due, but he was without sympathy for an opportunist and caustic in his denunciation of one. His friendship was to be desired,

for once gained he remained ever true to that bond. This Association and others to which he belonged showed their appreciation of him by conferring on him the highest honors they were privileged to bestow. His reputation as a veterinarian was of a national character, and his services were sought and obtained not only by the Government of the United States, but by various associations of the country to which his broad education, associated with his efforts and labor, made him so well known. The death of Rush Shippen Huidekoper leaves a vacancy in this Association that will be difficult to fill.

In the death of Robert J. Saunders, who passed away in his 66th year at his home in West Roxbury, Mass., one of the original members of U. S. V. M. Association was removed. A self-made man, he took up the profession of his father. Thoroughly conscientious, self-sacrificing and studious, he commanded the respect and good-will of all who knew him. His life was spent in the city of Salem, Mass., with the exception of about one year, when, on account of rheumatism, he was obliged to give up active practice.

The suggestions I have offered and shall offer are made with the hope that the past harmony which has prevailed in the Association may continue. "The Romans until the fall of the empire maintained that all men were equal." "Character and talent will find their level without regard to costume." "Superiority is an attribute of character that is attained by education, practical, literary and social." "No member fulfills his duty to this organization who sets himself to find excuses and evasions to escape from constitutional obligations." "In times of excitement some may not have stopped to consider these, but have followed what seemed to be the current of thought; had they fully investigated the real question and borne in mind their constitutional obligations, certainly they would have fulfilled them with alacrity."

Since the present makes the future, in the words of Daniel Webster, "Let us cherish those hopes that belong to us, let us devote ourselves to those objects that are fit for our consideration and our action." "Let us raise our conceptions to the magnitude and the importance of the duties that devolve upon us. Let us preserve our Constitution and harmony will prevail."

PRESENTATION OF A GAVEL.

At this point, Dr. W. T. Monsarrat, of Honolulu, Hawaiian Islands, stepped to the front of the President's desk, saying that

he had the pleasure of representing the Association in one of our newest possessions in the Pacific Ocean, and that he had brought with him a unique gavel which he hoped the Association would honor him by accepting, and that it might be employed in opening many important sessions. This was received with great applause, and later a resolution was adopted thanking the donor for his thoughtfulness. The gavel itself is probably one of the handsomest and most novel ones in this country. It was manufactured in Honolulu, under the direction of Dr. Monsarrat, the handle being made of native Karvila wood, tipped with the horn of a Sandwich Island wild boar; the gavel-hammer is made of the horn of a native bullock, the base of which is covered by the first Hawaiian silver dollar coined in 1883. An enameled coat-of-arms of Hawaii, in gay colors, adorns the front of the hammer, on the reverse side of which is the following inscription: "Presented by W. T. Monsarrat, V. S., Resident Secretary, Territory of Hawaii, to the American Veterinary Medical Association at the 39th Annual Meeting, Sept., 1902, Minneapolis, Minn."

THE ATTENDANCE.

On motion, the calling of the roll was dispensed with, the attendance being determined by registration cards at the entrance to the hall.

The following members and visitors were present during the various sessions of the American Veterinary Medical Association:

MEMBERS.—Drs. Adams, Annand, Ackerman, Anderson (F. E.), Abele, Ainsworth, Baker (A. H.), Beckett, Behnke, Bell (R. R.), Brenton, Butler (G. W.), Butler (J. S.), Butler (Tait), Brimhall, Burnham, Cooley, Cotton (C. E.), Cotton (T. B.), Dalrymple, Dougherty, Dunphy, Ellis (Chas.), Fischer, Gay, Gibson, Glennon, Gohn, Gould (J. N.), Gould (J. W.), Harris, Heck, Hernsheim, Hinman, Hoskins, Hughes, Hunter, Jake-man, Jewell, Johnson, Jopling, Kelly (Wm. H.), Knight, Knowles, Leech, Lowe (Wm. H.), Loveberry, Lyford, Lyman (R. P.), McInnes, McKenzie, McNeall, Marshall, Martin (W. J.), Mayo, Merillat, Monsarrat, Moore (R. C.), Quitman, Norton, Pearson, Peters (A. T.), Piatt, Pierce (B. D.), Rayen, Ranck, Repp, Reynolds, Robertson (J. L.), Robinson, Ruhl, Ryan, Ryder, Salmon, Schaefer, Schwarzkopf, Smith (T. E.), Schmitt, Shepard, Sprague, Stanclift, Stewart, Stringer, Thomas, Torrance, Walrod, Ward, Winchester, Witte, White (G. R.), Whitbeck, Williams, Young, Youngberg—(94).

MEMBERS REINSTATED.—C. A. Clinton, A. A. Keys—(2).

MEMBERS-ELECT.—Drs. A. Bostram, M. V. Byers, J. W. Cook, S. A. Coxe, J. H. Crawford, John N. Gould, J. W. Haxby, W. S. Henderson, C. J. Hinckley, W. C. Holden, F. A. Ilstrup, H. Jensen, F. E. Lambrecht, G. Lames, R. LaPointe, H. C. Lyon, W. A. McClanahan, D. M. McDonald, G. McGillivray, J. H. McLeod, Peter Malcolm, Edw. L. Moore, H. F. Palmer, Calvert H. Playdon, H. A. Presler, Richard Price, F. A. Rich, C. J. Rhodes, J. G. Rutherford, George A. Scott, J. A. Scott, L. U. Shipley, S. P. Smith, C. E. Stewart, Arthur Trickett—(35).

DELEGATE.—Pennsylvania State Veterinary Medical Association—Dr. J. C. Foelker, Allentown—(1).

VISITING VETERINARIANS.—*Illinois*.—F. H. Ames, Canton; W. H. Welch, Lexington; F. C. Grayson, Paxton.

Iowa.—B. Harmon, Decorah; W. R. Fullerton, Dubuque; H. J. Hagerty, Dubuque; H. L. Stewart, Lacona; F. M. Roys, Manning; J. J. Richardson, Marcus; H. M. Gillian, Mason City; M. F. Leffingwell, Northwood; N. A. Kippen, Riceville; C. E. Narey, Spirit Lake.

Kansas.—E. F. McGraw, Ft. Scott.

Massachusetts.—William M. Simpson, Malden; Wm. Simpson, Springfield.

Minnesota.—T. Falconer, Alexandria; M. S. Whitcomb, Austin; J. J. McLaughlin, Blue Earth; Wm. Soneral, Cambridge; R. K. Jerner, Chatfield; H. Langerin, Crookston; J. T. Nattress, Delavan; J. J. Findlay, Duluth; John McKay, Duluth; L. Hay, Faribault; C. S. Shore, Lake City; H. C. Peters, Litchfield; M. J. Sexton, Minneapolis; J. W. Golden, Redwood Falls; J. Butters, Renville; John P. Graff, New Ulm; E. T. Frank, Warren; C. W. Bujarel, Wendell; Oscar Rydell, Wheaton.

Michigan.—D. S. DeWolf, Hart.

New Jersey.—W. Runge, Newark.

North Dakota.—W. S. Stinson, Crystal.

Ohio.—Gilbert Hess, Ashland; P. A. Dillahunt, Springfield.

Ontario.—Thomas Thacker, Renfrew.

South Dakota.—J. P. Foster, Shelby.

Wisconsin.—S. Beattie, Madison; H. L. Russell, Madison; B. L. Clark, Monticello; C. E. Evans, Racine; D. Roberts, Waukesha; E. D. Roberts, Janesville—(48).

LADY VISITORS.—*Illinois*.—Mrs. A. H. Baker, Chicago; Mrs. W. W. Dixon, Chicago; Mrs. A. Eger, Chicago; Mrs.

Joseph Hughes, Chicago; Mrs. J. F. Ryan, Chicago; Mrs. H. C. Peters, Litchfield.

Indiana.—Mrs. C. B. Ainsworth, Greensburg.

Iowa.—Mrs. J. I. Gibson, Denison; Mrs. William A. Heck, Maquoketa; Mrs. C. J. Hinckley, Odebolt; Mrs. G. A. Johnson, Sioux City.

Kentucky.—Mrs. D. A. Piatt, Lexington; Miss Piatt, Lexington.

Manitoba.—Mrs. F. Torrance, Winnipeg.

Massachusetts.—Miss A. M. Haley, Reading.

Michigan.—Mrs. S. Brenton, Detroit; Mrs. Horace M. Gohn, St. Johns.

Minnesota.—Mrs. A. Youngberg, Detroit; Miss A. May, Lasueur; Mrs. H. C. Peters, Litchfield; Mrs. J. G. Annand, Minneapolis; Mrs. S. D. Brimhall, Minn.; Mrs. C. E. Cotton, Minn.; Mrs. C. C. Lyford, Minn.; Miss Lyford, Minn.; Miss Nellie Carroll, St. Anthony Park; Mrs. M. H. Reynolds, St. Anthony Park; Miss Florence Burnham, Stillwater; Mrs. E. T. Frank, Warren; Mrs. J. A. Scott, Waverly; Mrs. G. Ed. Leech, Winona; Mrs. J. N. Gould, Worthington.

Missouri.—Mrs. C. H. Jewell, Kansas City; Mrs. S. Stewart, Kansas City.

Montana.—Mrs. M. E. Knowles, Helena; Mrs. O. Schwarzkopf, Ft. Assiniboine.

Nebraska.—Mrs. A. T. Peters, Lincoln; Misses Antoinette and Florence Peters, Lincoln; Mrs. W. A. Thomas, Lincoln; Mrs. K. Schafer, Tekamah.

New York.—Mrs. E. B. Ackerman, Brooklyn; Mrs. R. R. Bell, Brooklyn; Mrs. J. E. Ryder, New York City.

Ohio.—Mrs. Flora A. Cooley, Cleveland; Mrs. Paul Fischer, Columbus; Mrs. T. Bent Cotton, Mt. Vernon.

Pennsylvania.—Miss Emma Brooks, Philadelphia; Mrs. W. H. Hoskins, Phila.; Mrs. C. J. Marshall, Phila.; Miss Pearson, Phila.

South Dakota.—Mrs. J. P. Foster, Shelby.

Tennessee.—Mrs. W. C. Rayen, Nashville.

Wisconsin.—Mrs. G. W. Butler, Eau Claire; Mrs. D. Roberts, Waukesha—(54).

OTHER VISITORS.—*District of Columbia*.—E. V. Wilcox, Washington.

Iowa.—Master Joe Heck, Maquoketa.

Illinois.—J. C. Clinton, Alex Eger, Chicago; V. E. Kover, Chicago; D. E. Osgoaby, Chicago; J. L. Schmidt, Chicago.

Manitoba.—J. B. Leeson, M. D., Brandon.

Minnesota.—J. O. Comes, Minn.; V. M. Connelly, M. D., Minn.; J. C. Smith, Minn.; Robert S. Taylor, St. Paul; F. D. Ketchum, So. St. Paul; B. W. Kirby, St. Paul; Jared Burton, Wheaton.

Missouri.—E. Lee, Chillicothe.

Nebraska.—J. C. Boyd, Omaha.

New York.—W. W. Dixon, New York City.

Pennsylvania.—H. P. Brooks, Philadelphia.

Wisconsin.—F. E. Perkins, Ellsworth; Master Butler, Eau Claire—(21).

The minutes of the meeting of 1901 were not read, but the printed "Proceedings" were accepted in lieu thereof.

Dr. W. L. Williams introduced a resolution, expunging from the minutes the action taken at the last meeting in suspending the by-laws and expelling from membership Dr. Claude D. Morris, for his action in connection with the army veterinary bill. It was referred to the Executive Committee, which took up the case and went over the ground quite thoroughly. A letter from Dr. Morris protesting against and refusing to recognize the action of the Association was read by the Secretary. After discussion, the Committee recommended that the Secretary be instructed to return to Dr. Morris the three dollars which he had forwarded for dues for the coming year, and that he be informed that if he feels aggrieved at the action of the Association in having expelled him, that he will be permitted to appear before the Executive Committee at the next annual meeting and state his reasons therefor.

REPORT OF COMMITTEE ON INTELLIGENCE AND EDUCATION.

Dr. E. B. Ackerman, of Brooklyn, N. Y., chairman of this committee, made the following report :

"*Mr. President and Gentlemen* :

"The first work performed by your Committee on Intelligence and Education after appointment was to report the clinics held at Atlantic City, New Jersey, last September, a report of which was published in the Annual Report for 1901.

"It seems to me that the press or Publication Committee should report these clinics or at least give the Committee on Intelligence and Education credit for their part of the report.

"There is an apology this committee wishes to make. Your President was authorized by resolution to appoint a special committee, and a separate motion was made giving this special committee \$100 to spend for the purpose of creating public sen-

timent in favor of sanitary measures. This committee did not nor does not yet understand the exact purposes of its special work and the manner in which it was supposed to be accomplished. Almost everything which would interest the profession at large is published in our veterinary magazines, and it is therefore hard for this committee to push sanitary measures before the profession and public without writing original articles, and the chairman of this committee did not feel equal to that task. This committee received only one letter looking for information regarding this separate and new work ; this was from a veterinarian in Canada. I am sorry to say that by some accident, before the letter was read the second time, it was lost, and consequently the committee could not answer it because they did not remember the name and address, but the contents were of such a character that had the committee answered it, it would have advised the writer to subscribe for the leading veterinary magazines and keep posted as to what was going on.

" From the first veterinary school established in Boston in 1858 down to date, there have been started and established many veterinary schools, some of mushroom growth and termination, but in many cases it has been the survival of the fittest.

" The colleges to-day as per their announcements for 1902-03 show generally a higher standard of teaching ; they give first a better curriculum with a better staff of teachers, more attention to detail and special studies, as bacteriology, microscopy, histology, chemistry, more attention to recitation and clinical work and less to prescribed lectures, and last, but not least, the last few years have shown a better class of students with better preliminary education, many already holding academic and other degrees and who are looking to add their veterinary degree. The higher the entrance standard the fewer the students, but better the quality.

" Of the seventeen colleges in this country, the great majority now give a three-session course of at least six months each. While there are still some of our schools, in spite of all that has been said and done, who still continue to give a two-year course, but promise to change from year to year, each year putting it off until too late, one college advertising that the optional three years will be made obligatory in 1903.

" Much might be said, pro and con, of the advantages of a chair of veterinary medicine in agricultural schools, but still greater stress should be given to the experimental stations in many States. For they are the laboratory, the haven to which

practitioners can go and should go to, to have their diagnoses confirmed or upset, their specimens analyzed or tested, to educate themselves, to obtain knowledge to help them in the future, to reveal secrets they did not know, to give and make material for the experimenters to work on; thus aiding in the advancement of science, to the protection of themselves and their clients' property and the mutual advancement of everybody.

"Too much cannot be said in praise of veterinary medical associations, whether National, State or local; they are, first, the one factor that holds the profession together, that is the tie that binds, and in this union there is strength. It is through the efforts of these various associations that the good accomplished in each State has been successful. They are also the educators or teachers, the post graduate course of all successful practitioners. They bring out and strengthen the ethical, the social, the educational and the fraternal sides of our profession.

"One feature that has been growing in the association work is the appointing of representatives of one State association to attend the meetings of like societies in neighboring States; this is a practice that should be encouraged and developed. Along this same line I might say that our worthy President has during the last year performed an act worthy of emulation, viz.: The appointment of Dr. Knowles as the representative of the A. V. M. A. before the National Live-stock Association, in which he introduced resolutions endorsing the quarantine laws and regulations, established by our government, which were unanimously carried. He also gave a talk on the subject of tuberculosis in cattle regardless of whether it was contagious from animal to man or *vice versa*, and proved to this association that from the standpoint of economical animal husbandry it was for their interest to stand by and support the quarantine laws and not to oppose them, as some greedy breeders desired to do. This coming from a representative of our profession and being unanimously endorsed is a feather in our cap and Dr. Knowles did us credit. And I say that more of these official appointments to various farmers' clubs, breeding societies, State fairs, etc., will be to the advantage of our profession. Along the line of veterinary appointment and representation much can be done to create public sentiment in favor of sanitary measures rather than by committee work, care being taken to nominate or appoint representatives as near the various animal agricultural medical conventions as is consistent with the appointment of men capable of representing our society and profession.

"The practice of some State associations in having their minute papers and discussions taken *verbatim* is a very important one and deserves encouragement. The publishing of these papers and discussions in our veterinary magazines from month to month gives the profession as a whole much benefit and spreads current advancement to many from a large field of experience.

"Some bright mind will some day cull the best articles from those published and compile them and produce a book well worth a place in the library of all veterinarians. 'Of the making of books there are many.'

"This might truly be said of veterinary literature. There have been published in the last few years many books of great value, so that one might read constantly and not keep up with current issue. There is one book that I hope to see this Association hurry, and that is our veterinary pharmacopœia. Of standard books, such as anatomy, physiology, *materia medica*, etc., we have a very good and needed assortment. It is the books on special topics and general veterinary knowledge written by specialists that it is necessary for the profession to follow to keep posted and up to date. And last, but not least, it is the recommendation of your committee that all members of this profession should take all our veterinary magazines that are published regularly, whether monthly or weekly, together with a regular medical journal as published and used by our sister profession, and to be sure to read them.

"State legislation is contagious; the period of incubation differs widely in many States, some States are rendered immune after their veterinary laws are once passed and successfully operated, while other States seem subject to relapses and decay; again we have some with us who have not yet awakened from their siesta. A *résumé* and comparison of the various and many State laws would be interesting if one had the time and legal inclination.

"I cannot give you as full detail as I had intended on this subject, but it seems to me as the profession is progressing and growing and pushing forward its strength in our legislation halls, it would be well to try and get some uniformity in the new laws. I think New Jersey is a bright model for many of our States to follow, and that State is to be congratulated. It is not only the Bonanza State for trusts in mercantile life, but it has affected the veterinary profession and she has a trust veterinary medical association, made by consolidating three poor

weak, debilitated societies into one grand body ; and when this was completed she started out to make laws that would protect its graduate members and the public at large from imposition. These laws were formulated and passed in record time, due to the strength and energy of this association and its officers ; the laws were hardly signed before it nominated its examining board, who were appointed by the Governor ; they were sworn in at once and the organization was immediately completed by electing its officers and examining committee, and then, for fear some wily emperic would impose on them, they began the formation of county societies to keep tabs locally as a body, as well as individually. No two States seem to agree on the form of administration for its veterinary service, namely, one State will have a State veterinarian with large scope and powers, the next will administer such service through a board of health, department of agriculture, or cattle commission, with the veterinarian as the subordinate. Here again uniformity would be better for us.

" It seems to us the State of Massachusetts has taken a step backward in its veterinary legislation by abolishing its Board of Cattle Commissioners with its own powers, annual appropriation, etc., and making a Cattle Bureau of the State Board of Agriculture, appointed by the Governor and confirmed by the executive council, limited to one clerk and a salary of \$2000, thus diminishing the standing, power, situations and ambitions of the veterinary profession. Worse than all, it is not, according to the law, essential that the chief shall be a veterinarian at all.

" Maryland during the year has passed a bill carrying an appropriation of \$2000, to be used by the Experiment Station to investigate cerebro-spinal meningitis or acute enzoötic leucoencephalitis, an important disease. It almost failed to pass because the investigation was not to be carried on by the Live Stock officials, but this time it fortunately was left where passed, and it was left in the proper hands, and we will probably get some results that will be of benefit to the profession.

" States west are waking to the fact that they need protecting laws and sanitary regulations, but these are only acquired by united action and persistent effort on the part of somebody, especially veterinary societies. Ohio speaks promisingly of suitable laws another year, and so I might go on from State to State. Nothing is more harmful than allowing a good law to become a dead letter. ' A few good laws rigidly enforced,' is a good motto.

"A legislative committee is now essential in all State societies to watch the bills and veterinary interests, for hardly a year goes by that some detrimental bill is not presented, and unless headed off early, needs the united strength of the profession to quash it.

"A year ago Dr. Koch startled the world with the announcement before the British Tuberculosis Congress that the human family was practically immune to bovine tuberculosis. Following that Congress, this Association met in annual session, and after an animated debate resolutions were adopted which were timely and well taken, coming so soon after this startling announcement, but it only went to prove how closely the members of this Association have come together on more than one important disease.

"I believe that since those resolutions were passed by this Association it has been amply demonstrated that the human system is easily susceptible to the bovine bacillus and that the bovine is capable of inoculation by some human bacilli, but not so readily or easily as the reverse. There has been ample laboratory evidence demonstrated to absolutely confirm our position. And I think we can positively say, without reservation, that to all animals and man the bovine tubercle is more virulent than human bacillus, which is not as certain. Our experiments on monkeys is as near the human test as we can get, but that seems close enough. Dr. Garnault, of France, who inoculated himself in the presence of medical witnesses in a public abattoir in Paris last June with matter taken from a tubercular cow, has written that the inoculations have produced tubercular tumors, and for fear this would delay too long in producing a constitutional condition, he has since inoculated himself internally.

"Many countries have formulated systems for the control of tuberculosis in cattle, chief of which has been what we know as the Danish system. Working with that end in view, a number of Philadelphia veterinarians wrote a composite article entitled, 'Columella's Plan for the Economical Control and Eradication of Tuberculosis.' This is a very excellent article, and should be drawn to the attention of every health or agricultural department in the various States, to all local health departments, and we would specially draw the attention of the Bureau of Animal Industry to this as being particularly applicable to control interstate cattle.

"There is one other matter this committee wishes to draw to your attention, and that is the editorial that appeared in the

June number of the AMERICAN VETERINARY REVIEW. This editorial refers to articles which appeared in previous numbers of this magazine by our friend, Dr. Lianlard, and is entitled and reads as follows: 'The Veterinary Benefit and Protective Association.' . . . 'It is not infrequent that in a business which is rated by the insurance people as "extra-hazardous" that a veterinarian is disabled for weeks and even months by an accident which incapacitates him for any duty; or by disease, the result of infection from a patient, or through the natural penalties of human existence; or in case such accident or disease is sufficiently severe to terminate his life, then the question of the means for immediate necessities imposes itself upon him or those whom he may leave helpless behind him. All professions, trades, and businesses have their mutual aid associations, through which, by the annual payment of a small premium, a certain sum is guaranteed to each member in case of disability or death. . . .' It seems to your committee that this is the time and the place to start something of this sort, for where or how could it be better accomplished than in our National Association, which contains the intellect and push of the whole profession. Here we could draft our rules and regulations, elect our trustees and officers and if successful we could extend it to our State Associations making them subordinate bodies to report to this supreme body and work it on the plan of all mutual benefit associations. It would be of incalculable benefit to our members, and perhaps it would have the additional advantage of increasing our membership by its protecting as well as scientific stimulation."

The report of the committee was very fully discussed, particularly as to the subject of the creation of a mutual benefit and aid association. Dr. W. Horace Hoskins thought that from the standpoint of insurance it was not so urgent, since many insurance companies and fraternal organizations offered very cheap and elastic conditions, which placed protection in case of death within the reach of all; but he was personally cognizant of many cases where through disease, accident, or other circumstance the head of a family became so reduced in his ability to provide for those dependent upon him as to render his life and theirs a great hardship; and he thought that if the benefits were to flow to such unfortunate cases that the creation of such a fund would be a great blessing. While others discussed the subject, no definite action was taken. It will be noted that President Winchester dealt with the same subject at considerable length in his address; so that the question has been opened

up in a prominent manner, and at the next meeting possibly it will take tangible form, as the members will have had time to think over the matter, and a leader found who will undertake its organization.

Another recommendation of the committee as to colleges and examining boards brought out a lively discussion. There were some suggestions that certain schools were not living up to the requirements of the Association, and that graduates from them were being received into membership in the A. V. M. A. who had not received the requisite instruction, and various ideas were put forth as to the best methods of making the courses more uniform. Some thought a committee should be appointed to inquire into the matter and report; but it was finally decided that such work came clearly under the jurisdiction of the Committee on Intelligence and Education; and accordingly that committee was instructed to ascertain from the heads of the various schools, either by correspondence or verbally, just what is being done, in the matter of hours, instructors and curriculum. Also, that the various State examining boards should be interrogated as to their methods, and the whole to be embodied in the next annual report. Prominent in this discussion were Drs. Quitman, Hoskins, Norton, Gibson and others.

OTHER COMMITTEE REPORTS.

The Committee on Diseases, through Chairman Ranck, presented a lengthy report, dealing principally with anthrax, as per instructions at the Atlantic City meeting. He dwelt largely upon the bacterian aspect of the subject, and his report showed great care and much research, it forming a valuable contribution to the etiology and pathology of the disease.

The Committee on Army Legislation reported verbally through Chairman Pearson that it was not advisable to press the question upon Congress of raising the status of the veterinarian in the Army at present. The Secretary of War felt that the improvement made in the service a couple of years ago should be given a greater trial, and that any efforts made now would not receive his approval or support. So that it would be better to reserve our ammunition until later, when there would be a change in the personnel of the War Department.

The Committee on Pharmacopœia also reported verbally through Chairman Merillat, that as the undertaking was a very large one it should be understood that the members of the committee should not be subject to change by new administrations; that those selected should be non-removable until their work

had been completed. He stated that he was giving the question earnest thought, and would soon assign to the different members of the committee definite work to do, and that he hoped by the next meeting to report good progress.

The Committee on Resolutions, as is customary, reserved their report until near the close of the meeting, and the results of their deliberations will be found elsewhere in this issue. All the resolutions offered by them were unanimously adopted.

Treasurer Lowe showed that at his last report he had on hand \$1319; that during the year he had received from Secretary Stewart \$800, making a total of \$2119. He disbursed for secretary's salary, expenses of State secretaries, printing the "Proceedings," stationery, printing, etc., \$1542.17, leaving a balance on hand of \$576.83. The replenishing of the treasury from the annual dues and from sixty-six new members for the 1902 meeting are not included in this report.

The Secretary's report was quite voluminous, and dealt with the affairs of the Association in general. It is here given in full :

SECRETARY'S REPORT.

"The Association year culminating in this annual meeting has been one of continuous activity for your Secretary. The obligations of this office have increased with each succeeding year in proportion to the increase in membership and the greatly enlarged demand on the time and talents of practitioners. Not many years ago very few veterinarians were so busy that they could not give time to correspondence and preparation of contributions for local and national meetings. Now the nearly universal response to requests for papers is, 'I cannot possibly find time to write a paper, and I do not feel sure that I can attend the meeting; my practice requires every moment of my time and I cannot secure a competent substitute. I want the benefit to be derived from the meeting and need the rest and recreation, but fear I cannot have them.' This state of business activity has made the Secretary's duties difficult. The self-sacrificing professional spirit, however, pervades our membership and has made possible the preparation of the programme announced for this meeting. The number and character of papers which bear direct relation to general practice have stimulated general interest in the meeting, and numerous letters received from veterinarians from widely separated parts of the continent have expressed their earnest desire to be present to

profit by the presentation and discussion of the papers.

"The veterinarians of Minnesota have taken special pride in this meeting to be held in their capital city and have left no stone unturned to interest the veterinarians of the northwest. They have very greatly aided the officers of the Association in keeping the date and occurrence of this meeting before the profession of the country.

"The broad professional spirit of the Association manifested in the adoption of its name has encouraged the veterinarians of the Dominion of Canada to take an active interest in the organization, as you will note by reference to the list of contributors to the programme of papers, the number of applications for membership from the Dominion and by the relatively large attendance therefrom. It is very gratifying indeed to know that the veterinarians of this continent do not recognize political boundaries as boundaries of veterinary science.

"The helpful influence of this Association is becoming more and more manifest and I believe that all are convinced of the wisdom of holding the annual meetings in various parts of the continent so that professional uplift may be widely disseminated.

"The financial affairs of our Association have continued in a healthy state, which has permitted the resident secretaries and committees to perform their duties without personal financial loss. If this phase of our Association's work be carefully looked after, its future power for good will be greatly multiplied.

"Two letter files are taxed to the extent of their capacity to hold the communications received during the year and a thousand page copying book has been filled as record of out going letters, in addition to two sets of printed letters sent all members. This is equivalent to four personal letters to each member. The resident secretaries have sent two letters and a copy of our programme to all worthy veterinarians, not members, in their respective territories, extending a cordial invitation to them to attend this meeting and to become interested in this organization. I believe these cordial letters are potent agents in promoting a higher ethical and professional standard among veterinarians throughout the continent, and that they assist in promoting all the purposes for which this Association is maintained.

"The families of deceased members sent grateful acknowledgments of obituary resolutions adopted during the last annual meeting. Mrs. Geo. Fleming also sent to the Association photographs of her deceased and distinguished husband.

"Every instruction of the Association and the President, Dr. J. F. Winchester, have been faithfully followed and the behests of all members given immediate attention, and, so far as the Secretary is informed, harmony and good will prevails.

"The finances of the Association are shown in the following statement:

Collections.

Dues collected, period ending Sept. 1st, 1902	\$1,141.00
Initiation fees	295.00
Total	\$1,436.00

Disbursements.

Expenses 1900-1901.

Postage and express incurred by resident secretaries	75.07
Bills of publication, resolution and pharmaceutical committees	19.41
Lechtam Printing Co	106.45
Bill of Treasurer, postage and printing	9.24
Bill of President, sundries	6.05
Postage and sundries by Secretary	26.05
Salary of Secretary	300.00
	542.27

Expenses 1901-02.

Use of stereopticon	20.00
Floral emblem, Dr. Huidekoper	20.00
Blank certificates of membership	57.50

Publication of proceedings :—

Stenographer	\$127.65
Extra typewriting	10.50
Printing, binding and mailing	594.52
Printing and distributing stationery for President, Secretary and resident secretaries	732.67

Secretary's Expenses :—

Postage	15.00
Issuing certificates to new members	25.49
Engrossing obituary resolutions	7.00
Sundry items	10.99
Treasurer's bond	58.48
Treasurer's bill, stationery and postage	10.00
	3.50
	999.90
Total	\$1,542.17

Cash in the hands of the Treasurer	576.83
Cash in the hands of the Secretary	636.02
Bills outstanding, estimated	1,212.85

"It will be noted that the committee on local arrangements for the Atlantic City meeting did not accept the customary allowance of \$50.00 for banquet purposes.

"In closing this report I wish to acknowledge the universal

assistance given me by the resident secretaries and the growing interest manifested by these officers in spreading the influence of the A. V. M. A. The relation with all officers and members has been most cordial throughout the year.

"Very respectfully submitted, S. STEWART, *Secretary.*"

STATE SECRETARIES' REPORTS.

The State Secretaries did not generally make reports, but there were many notable exceptions. Those present who read reports were Dr. J. C. Norton, for Arizona; Dr. J. I. Gibson, for Iowa; Dr. J. S. Butler, for Minnesota; Dr. C. J. Marshall, for Pennsylvania; Dr. T. F. Robinson, for Rhode Island; and Dr. G. R. White for Tennessee. Other State Secretaries who sent in reports, which were read by title and will be published in the "Proceedings," were Dr. J. G. Hill, for Florida; Dr. Benj. D. Pierce, for Massachusetts; Dr. T. E. Smith, for New Jersey; Dr. F. E. Anderson, for Ohio; Dr. Benj. McInnes, for South Carolina; Dr. S. B. Nelson, for Washington, and Dr. L. N. Reefer, for West Virginia.

The report for Pennsylvania by Secretary C. J. Marshall was especially interesting, and is given herewith in full:

"The veterinary profession of Pennsylvania is made up of about 1700 registered men; nearly 300 of this number are college graduates. About 1000 names on our registration list were placed there improperly and have ceased to have any identity with our profession. We are fairly well organized and working in harmony on all legislative and professional subjects. There is one State organization composed of about 200 working members, which represents all sections of the commonwealth. There are also several energetic local societies. The State Association reached its twenty-first birthday last year. It attained its majority with a rich inheritance of perseverance and integrity from its founders, who are still guarding its interests, as only thoughtful and loving parents can do. In the A. V. M. A. we find enrolled 27 members from Pennsylvania. Of the 300 men eligible we hope soon to see a much larger per cent. belonging to the National Association.

"The Keystone Veterinary Medical Association meets in Philadelphia the first Tuesday evening of each month. At present it is trying to devise a plan for the improvement of the milk supply to our hospitals and public institutions. A circular letter was sent out last winter to the different stewards or managers, and it was found that very little attention was being

paid to the inspection of milk, the system of handling it or the cleanliness of the herds and dairies supplying it.

"The State Board of Veterinary Medical Examiners has been established seven years: In this short time it has demonstrated its usefulness. The records show each year that the young men presenting themselves for the examinations are much more thoroughly prepared for their work, and that better educated and more scholarly young men are entering our profession. This Board is trying at present to get an Act passed by the Legislature whereby a re-registration will be made necessary. This appears to be the only plan by which the registration lists can be freed from the names of many persons who have no connection with our profession. This Board has secured convictions against three illegal practitioners, and has three more cases in the courts at present. Most of the complaints brought before the Board are adjusted peaceably. The Secretary attends personally and promptly to all complaints, and has the faculty of bringing about a settlement, usually without legal assistance. His term of office expired last year, and the Governor recognized his usefulness by reappointing him, which action met with the unqualified approval of the entire profession.

"The State Live Stock Sanitary Board of Pennsylvania was organized in 1895. Its thorough organization was brought about largely through the efforts of our State Veterinarian, whose tact, scientific skill and indomitable perseverance have made it the admiration of our profession. We wish that every State in the Union had a similar Board equally as well organized and working as harmoniously for the good of our live stock interests. The little opposition to the Board for the first few years has gradually subsided, until at present very little criticism is heard from any source. At present the Board is trying to devise plans whereby cattle reacting to the tuberculin test and showing no visible signs of disease, can be utilized with less loss to the owner and State than is necessary under the present regulations. It has under observation a good sized herd of reacting animals and is studying the sanitary precautions necessary to handle such a herd and also the best way to dispose of its products.

"The Laboratory of the S.L.S.S.B. is one of the most complete of its kind. All of the tuberculin, mallein, and most of the vaccines used in the State are manufactured in this laboratory and distributed among our profession free of charge. This alone represents a sum of money which would cost the State

quite as much as it does to run the laboratory, yet its principal value is for research and diagnostic purposes. In the lines of research work a method is being tested for immunizing cattle against tuberculosis by a process of vaccination with attenuated cultures. For diagnostic purposes the laboratory has become a necessity. Special shipping boxes are deposited with veterinarians in different sections of the State with directions for packing and shipping specimens. These specimens are examined pathologically and bacteriologically if necessary. In case of infectious diseases, the result of the examination is returned promptly to the shipper with instructions and the necessary material for handling the outbreak. In the past year very few cases of glanders have been observed. This disease may be said to be extinct in Pennsylvania and only occurs here and there as it is brought in from other States. Altogether there are about a dozen cases a year. A few cases of anthrax and some rabies have been reported. The rapid diagnosis of rabies as practiced in the laboratory, consisting in an examination of the cervical ganglion, economizes a great deal of valuable time in cases of suspected rabies.

"The instructions for obtaining specimens, and the directions for handling contagious diseases sent to the veterinarians by the State Board and the Laboratory, have been equivalent to a post graduate course for all who have had to deal with such cases. It has stimulated the desire among our profession to read more, and become more familiar with the most modern ideas. Its influence has done much to unify our profession and make it more highly respected.

"There are many factors at work for creating a greater demand for more and better domestic animals. This benefits our profession indirectly. Where valuable animals are kept, skillful veterinarians are required. Among these factors the most notable are horse shows, dog shows, fat stock shows, the numerous pet stock shows at county fairs. Each in its turn stimulates the desire to breed animals true to some certain type. The demand was never better for a first-class specimen of any class or type. In the last few years many wealthy gentlemen have become interested in show competitions and fabulous prices are paid for animals that possess qualities suitable to become show animals. There has been a marked increase in the demand for saddle horses. The bicycle has been relegated to oblivion, and horse-back riding has become much more popular. Horse shows have increased the value of all fashionable classes of

horses. These shows have been a source of education to those interested in the equine species.

"In the matter of meat and milk inspection very little has been done in the past year. The Federal meat inspectors are doing good work in Philadelphia, and we hope that the time is not far distant when we can have some system of meat inspection for cities of the first and second class especially that will do as thorough work in the inspection of local dressed meat for home consumption as is practiced at present by the Federal inspectors.

"A very satisfactory system of milk inspection is carried on in Philadelphia under the direction of the Pediatric Society. This society will recommend milk from any dairy that will conform to its requirements. The society employs a veterinarian, bacteriologist and a chemist to make inspections at certain intervals, at the expense of the dairymen. The veterinarian is to be satisfied with the health of the cows, with the cleanliness of the herd, stable assistants, milking utensils, general sanitary conditions, feed, etc., and that the interest and precautions necessary for producing clean milk are exercised faithfully and constantly. The tuberculin test is to be used at the discretion of the veterinarian.

"The bacteriologist examines the milk at least once each month. The bacteria must not exceed 10,000 per c.c.

"The chemist must be satisfied with the natural constituents of milk and that no artificial preservatives are added to it.

"At present there are five dairies producing milk for the Philadelphia market under these conditions. We hope in time that there will be milk enough produced under these or similar rigid conditions, to supply all persons who appreciate the necessity of using clean milk. Milk produced in this manner, must of necessity bring a few cents more per quart than milk produced and handled in a careless manner. People recognize different qualities of clothing, meats, vegetables, cigars, liquors, etc.; why should they not also recognize and appreciate the different qualities of milk, and be willing to pay for the extra pains necessarily involved for obtaining it clean and wholesome? The beneficial effects of the dairies producing milk under the direction of the Pediatric Society are observed by other dairymen, and a decided improvement is noticed on the farms in close proximity to such dairies. The same interest produced in horses by horse shows, and in dogs by dog shows, can also be produced in dairies by model dairies. It should be our duty to

encourage such undertakings in every way possible. It has been said of dairies producing milk under such careful conditions that they are short lived; that the enthusiasm is soon lost and that business drifts back into the same old rut. This has not been observed in respect to the work done for the Pediatric Society. Certified milk has been produced and sold in Philadelphia for the past five years, and the demand is increasing.

"The Veterinary Department of the University of Pennsylvania is at present located in temporary quarters. The old buildings were razed last year to make room for a medical and veterinary laboratory. The plans for the new building are about completed. The construction is expected to begin soon. It is to be located on one of the principal streets near the University, on a site that will be much more desirable than where it formerly stood. The plans are for one of the most complete and unique buildings of its kind in any English-speaking country.

"Three members of our profession have died in the last year. Dr. W. T. Miller, of Apollo, Pa., one of the old members of the A. V. M. A., died June 18th, 1902. He was a graduate of the American Veterinary College, class of 1887. Dr. James Beatty, a native of Pennsylvania, graduated from the Veterinary Department of the University of Pennsylvania in 1897. He was employed three years prior to his death as a Federal meat inspector and was located in Philadelphia at the time of his death. His loss is keenly felt by his many friends, who esteemed and respected him for his loyalty, integrity, perseverance and professional skill. Dr. Rush Shippen Huidekoper, whose death I also have the sad duty to report, was one of the greatest builders of the veterinary medical profession in America. His death is a national loss, and is most keenly felt in his native State by those who knew him best. The honor of doing his memory justice at this meeting has fallen on one of his most faithful friends and fellow workers. Suffice it to say that his sentiments are the sentiments of the entire profession."

On Wednesday morning, Sept. 5th, the convention met at 9.30, with the President in the chair, and a very large attendance of members and visitors.

The Executive Committee's report was presented and acted upon in accordance with its recommendations.

ELECTION OF OFFICERS.

The convention then proceeded to the election of officers for the ensuing year. During the preceding evening there had

been considerable electioneering and discussion of candidates, there being three names prominently mentioned for the office of President and as many more for that of Secretary. By the time the meeting opened, however, the atmosphere had cleared very much, and it was not hard to guess the outcome of the elections.

For President, Dr. Pearson, in placing in nomination Dr. M. E. Knowles, of Montana, paid a splendid tribute to his worth and services to the cause of veterinary science and his eminent fitness for the position. Dr. Hoskins placed the name of Dr. S. Stewart before the convention, saying that no eulogy was necessary in the case of this nominee, since his great work in behalf of the Association and the science were known to all present. Dr. Norton seconded his nomination. Dr. W. J. Martin, of Illinois, placed Dr. A. H. Baker's name before the convention for President, and it was seconded by Drs. Quitman and Leech. Dr. Knowles refused to allow his name to be used for the office, as he considered both of the other candidates more entitled to the position.

President Winchester appointed as tellers Drs. Ackerman and Marshall, and they proceeded to distribute and collect the ballots of the members. Ninety-eight ballots were cast, of which Dr. Stewart received 68; Dr. Baker 29, and one was blank. Dr. Baker moved that Dr. Stewart's election be made unanimous, which was carried.

To elect five Vice-Presidents (seniority to be determined, by the number of votes received by each), eight gentlemen were placed in nomination, as follows: Dr. E. M. Ranck, of Pennsylvania; Dr. M. H. Reynolds, of Minnesota; Dr. J. G. Rutherford, of Canada; Dr. E. B. Ackerman, of New York; Dr. G. W. Dunphy, of Michigan; Dr. W. H. Dalrymple, of Louisiana; and Dr. W. T. Monsarrat, of Hawaii. The result was that the following were elected: Rutherford (78), Dalrymple (69), Ranck (58), Reynolds (57), Knowles (57).

For Secretary, Dr. S. Brenton nominated Dr. Tait Butler, of North Carolina, seconded by Drs. Kelly and Reynolds. Dr. Knowles nominated Dr. John J. Repp, of Iowa, seconded by Drs. Merillat, Stewart, Moore, Robertson, and Gibson. Dr. Wm. J. Martin, of Illinois, was placed in nomination by Dr. Quitman. The result of the balloting showed Dr. Repp to be elected by a plurality of 16.

When the office of Treasurer was reached some one made a motion that nominations be closed, even before there was one

made, for it has become so usual for the present incumbent to be kept in office by closing off nominations after his name has been presented that we presume the member did so in a mechanical manner. He was only premature, for as soon as half a dozen nominated Dr. Wm. Herbert Lowe, the nominations closed and he was elected by acclamation.

So that the officers of the A. V. M. A. for 1902-03 are as follows:

President—S. Stewart, of Missouri.

Vice-Presidents—J. G. Rutherford, of Canada.

—W. H. Dalrymple, of Louisiana.

—E. M. Ranck, of Pennsylvania.

—M. H. Reynolds, of Minnesota.

—E. M. Knowles, of Montana.

Secretary—John J. Repp, of Iowa.

Treasurer—Wm. Herbert Lowe, of New Jersey.

PAPERS PRESENTED.

Dr. A. H. Baker, of Chicago, Ill., read a paper entitled "The Pathogenesis of Equine Pneumonic Emphysema," which opened up a new line of thought in connection with this somewhat common disease of the soliped. Dr. Bell believed that the causes assigned by the essayist were not primary, but aggravations of a pulmonic nerve paresis. In the November REVIEW the paper will be printed in full.

Dr. Repp, of Ames, presented a somewhat lengthy and very minute description of the recently described disease which he has named "External Ulcerative Ano-Vulvitis of Cattle," which was so exhaustive that he had to omit much of the minutiae. Happily the REVIEW was enabled to secure a copy of Dr. Repp's paper, and it will be found elsewhere in this number.

Dr. W. C. Rayen, of Nashville, Tenn., made a strong plea for the stock-raisers of his State in his paper "Texas Fever and Its Relations to the Live Stock Interests of Tennessee," which was discussed by Drs. Salmon, Tait Butler, White, and Dalrymple.

"Equisetum Arvense" was the subject of a very explicit paper by Dr. F. A. Rich, of Burlington, Vt., and a novel feature was the distribution to each auditor of a bulletin of the Vermont Experiment Station on the subject of the poisonous plant described, together with a specimen of the plant, which is commonly known as "horse-tail," and which is extensively distributed throughout the country. By invitation Dr. Wilcox, expert

in poisonous plants for the Bureau of Animal Industry, who has spent much of his time in Montana and other Western States in such researches, gave an extremely interesting description of the action of this plant among domestic animals, together with efforts at treating animals poisoned by it with permanganate of potash. This brought forth a confession from Dr. Pearson that he had also tried similar treatment in the disease which he has described as "Forage Poisoning," it being what is familiarly known as so-called "cerebro-spinal meningitis." It will be remembered that Dr. Pearson has taken ensilage from a farm where this disease was prevalent, and by feeding it to healthy horses at the hospital of the Veterinary Department of the University of Pennsylvania produced the identical symptoms. He stated that while some improvements in the symptoms were produced by the use of the permanganate he did not have sufficient data to make a definite statement as to its therapeutic effects.

"The Organization of State Veterinary Work," by Dr. Leonard Pearson, was not presented in its allotted place, but when ready for presentation so little time was left that he did not attempt to read his long report; but gave an extremely valuable talk upon the subject, giving dates and figures with an accurateness that denoted great familiarity with the subject. His paper was turned over to the Publication Committee, and will be printed in full in the "Proceedings."

Dr. J. C. Norton, of Phoenix, Arizona, State Veterinarian, showed the "Results of Strict Sanitary Regulations in Arizona," and proved to all the great benefits that may be secured by states which enact and enforce wise measures along these lines.

The thorough manner in which the papers were discussed necessitated an evening session on Wednesday, and the members sat without leaving their chairs until 11 o'clock, taking the deepest interest in all that transpired.

"Hæmorrhagic Septicæmia in Cattle," was the subject of Dr. S. D. Brimhall's paper, and a very thorough one it was, for every aspect of the new disease was gone over, particularly its bacteriological side. Dr. Peters, of Nebraska, discussed it from the standpoint of its similarity to what has been so often described as "corn-stalk disease," and he and the essayist exchanged views upon this point. Dr. L. B. Wilson, bacteriologist of the Minnesota State Board of Health, was called for, and detailed in a very clear manner his work with the disease, de-

scribed from a bacteriological standpoint, while Dr. Westbrook, professor of pathology at the Minnesota State University, contributed much valuable information on the subject in a pathological sense.

"Poisonous Stock Foods," a well prepared and splendidly read thesis by Dr. N. S. Mayo, of Manhattan, Kansas, brought out some very lively discussion. Dr. Peters at once took the floor in defence of many plants which were placed in the suspicious column by the essayist; Dr. Butler came to the rescue of cotton-seed meal; Dr. Dalrymple was eloquent and statistical on the subject of balanced rations, while questions were plied from many quarters; the essayist in answering them, showed himself in possession of a wide and complete knowledge of the whole subject. The discussion only ceased when the President shut off the debate through lack of time.

Dr. Charles Schmitt, of Dodgeville, Wis., had a very practical paper on "Barrenness in Bovines," which was likewise a provoker of lively discussion, in which Drs. Rutherford, Ryder, Mayo, Abele, Lyman, and others took part. This paper is printed in the present number of the REVIEW.

The reading of papers was continued on Thursday morning.

"Malarial Fever in the Horse," proved an extremely valuable paper by Dr. F. Torrance, of Winnipeg, Manitoba. He and Dr. Bell, of Canada, have been carrying on extensive investigations as to its cause, examining blood and tissues; but, while much has been learned of "swamp fever," no definite micro-organism has been isolated. Dr. Rutherford added some strong points in his argument, and Dr. Olof Schwarzkopf, fresh from the Philippines, spoke of the close relationship between the disease described and "surra," only that if it were identical he failed to understand how the investigators could have overlooked the large parasite in the blood. He promised to write upon the subject when he got settled in his new station in Montana.

"Differential Diagnosis between Farcy, Furunculus, and Bursatee" was Dr. Lyford's title, and he followed up his points at the clinic by presenting patients affected with each disease.

"The Legitimate Field of the A. V. M. A." was the subject of a paper by Dr. Roscoe R. Bell, of New York, but instead of reading it the author made a statement that his efforts were directed toward defending the rights of the practitioner in the Association, which had been assailed in public print, with the idea of throwing out of the annual meetings clinics and practi-

cal papers. It was very late, and but little time remained for the presentation of papers, and as the Association had shown by resolution and by the applause of speakers who took the same view as the essayist that it would brook no such contention, so that no good purpose could be served by consuming the time of the meeting in considering a subject already decided. The author therefore turned his paper over to the Publication Committee.

The literary programme was brought to a close by the presentation by Dr. W. Horace Hoskins of a eulogy of his late friend, Dr. Rush Shippen Huidekoper.

Other papers which were not read on account of the absence of their authors, most of which will be published in the "Proceedings," are as follows :

"The Veterinary Profession, Past, Present and Future," by Dr. D. McEachran, of Canada ; "The Relation of Veterinary Science to the Medical Profession," by Dr. D. King Smith, of Canada ; "The Hospital Management of Dogs," by Dr. Chas. Ellis, of Missouri ; "Sidebones," by Dr. J. S. Anderson, of Nebraska ; "Ictero-hæmaturia of Sheep," by Dr. M. E. Knowles, of Montana ; "The Care and Comfort of Domestic Animals under Varying Circumstances," by Dr. E. A. A. Grange, of New York ; "Equine Periodic Ophthalmia," by Dr. M. Jacob, Knoxville, Tenn. ; "So-called Contagious Ophthalmia of Cattle," by T. D. Hinebauch, of North Dakota ; "A Tumor-like Lesion in the Lung of a Horse Caused by a Blastomyces," by Dr Langdon Frothingham, of Massachusetts.

NEW MEMBERS ELECTED.

The following applications for membership were reported on favorably by the Executive Committee at its various sessions, and were duly elected to membership :

C. A. Clinton, M. D. C. (C. V. C., '94), Laurens, Iowa ; reinstatement.

M. C. Baker, D. V. S. (McGill, '79), Montreal, Can. ; voucher, Chas. H. Higgins.

Fred. Forbes Bushnell, D. V. M. (N. Y. S. V. C., '02), Winsted, Conn. ; voucher, Thos. Bland.

Robert E. Cochrane, M. D. V. (McKillip V. C., '00), Milwaukee, Wis. ; voucher, R. H. Harrison.

S. A. Core, V. S. (O. V. C., '92), Brandon, Manitoba, Can. ; vouchers, W. J. Hinman and F. Torrance.

J. M. Creamer, V. S. (O. V. C., '87), Portland, Oregon ; voucher, Wm. McLean.

- J. W. Dunham, V. S. (O. V. C., '94), Fargo, N. D.; vouchers, W. F. Crewe and T. D. Hinebauch.
- J. H. Gain, M. D. C. (C. V. C.), Lincoln, Neb.; voucher, A. T. Peters.
- Otto Faust, D. V. S. (A. V. C., '88), Poughkeepsie, N. Y.; voucher, Wm. Henry Kelly.
- Jno. C. Hargrave, D. V. S. (McGill, '95), Medicine Hat, N. W. T., Can.; voucher, Chas. H. Higgins.
- Edward T. Harrington, (M. D. V., '90), Boston, Mass.; vouchers, B. D. Pierce and H. P. Rogers.
- W. C. Holden, V. S. (N. Y. C. V. S., '80), Delphos, Ohio; voucher, F. E. Anderson.
- Geo. A. Knapp, V. S. (N. Y. C. V. S., '95), Millbrook, N.Y.; voucher, Wm. H. Kelly.
- T. Lambrechts, M. D. V. (McKillip V. C., '01), Montevideo, Minn.; vouchers, M. H. Reynolds and J. S. Butler.
- Morgan B. Lamb, D. V. M. (Ohio State Univ., '01), Pullman, Wash.; voucher, Sofus B. Nelson.
- K. La Pointe, D. V. S. (Montreal, '85), Le Sueuer, Minn.; voucher, J. S. Butler.
- H. C. Lyon, V. S. (O. V. C., '91), Hutchinson, Minn.; voucher, J. S. Butler.
- D. M. McDonald, D. V. S., '91), Brainerd, Minn.; voucher, J. S. Butler.
- Geo. McGillivray, V. S. (O. V. C., '85), Spring Valley, Minn.; voucher, J. S. Butler.
- E. Makins, Jr., D. V. S. (K. C. V. C., '00), Abilene, Kan.; voucher, N. S. Mayo.
- A. W. Miller, D. V. S. (K. C. V. C., '01), So. Omaha, Neb.; voucher, S. Stewart.
- B. O. Minge, M. D. V. (McKillip V. C., '01), Memphis, Tenn.; voucher, G. R. White.
- E. L. Moore, D. V. S. (Vet. Dep. Col. Univ., '98), Brookings, S. D.; vouchers, James Law and D. E. Salmon.
- Joseph W. Parker, D. V. S. (K. C. V. C., '00), San Antonio, Tex.; voucher, S. Stewart.
- Adolph J. Pistor, D. V. S. (A. V. C., '98), Newark, N. J.; vouchers, A. T. Peters and Jno. D. Sprague.
- Calvert Howard Playdon, M. D. V. (Harvard Univ., '96), Reading, Mass.; vouchers, B. D. Pierce and J. F. Winchester.
- F. A. Rich, V. S., M. D. (O. V. C., '89), Burlington, Vt.; vouchers, B. D. Pierce and J. F. Winchester.
- C. J. Rhodes, M. D. C. (C. V. C., '94), Beloit, Wis.; voucher, C. C. Lyford.

J. J. Riordan, D. V. S. (A. V. C., '94), Beverly Farms, Mass. ;
vouchers, A. J. Sheldon and F. H. Osgood.

J. G. Rutherford, V. S. (O. V. C., '79), Ottawa, Can. ;
voucher, Chas. H. Higgins.

Jno. A. Scott, M. D. C. (C. V. C., '93), Waverley, Minn. ;
vouchers, S. D. Brimhall and J. S. Butler.

J. N. Sheppard, M. D. C. (C. V. C., '93), Langdon, N. D. ;
vouchers, W. F. Crewe and T. D. Hinebauch.

T. P. Smith, M. D. V., D. V. M., B. S. A. (Iowa S. C.,
McK. V. C., '99, '00), Cando, N. D. ; voucher, John J. Repp.

U. S. Springer, V. S. (O. V. C. '80), Grand Rapids, Mich. ;
vouchers, S. Brenton and W. L. Williams.

Harry F. Steele, D. V. S. (A. V. C., '93), Fort Sill, O. T. ;
voucher, Ray J. Stancliffe.

R. H. Treacy, M. D. C. (C. V. C. '94), Bismarck, N. D. ;
vouchers, W. F. Crewe and T. D. Hinebauch.

Arthur Trickett, (K. C. V. C., '01), Kansas City, Mo. ; vouchers,
A. T. Peters and R. C. Moore.

Harry W. Watson, V. M. D. (U. of Pa., '01), Haverhill, Mass. ;
voucher, B. D. Pierce.

A. L. Wood, D. V. M. (Iowa S. C., '02), Prairie City, Iowa ;
vouchers, Jno. J. Repp and Carl W. Gay.

J. N. Gould, D. V. M. (Iowa S. C., '02), Fairmount, Minn. ;
voucher, S. H. Ward.

H. Jensen, M. D. C. (C. V. C., '00), Weeping Water, Neb. ;
vouchers, A. T. Peters and J. F. Winchester.

Samuel Burrows, V. M. D. (U. of Pa., '02), Philadelphia,
Pa. ; vouchers, S. J. J. Harger and C. J. Marshall.

J. H. Crawford, M. D. V. (McK. V. C., '97), Harvard, Ill. ;
voucher, L. A. Merillat.

J. W. Haxby, D. V. S. (C. V. C., '92), Villisca, Ia. ; vouchers,
John J. Repp and W. A. Heck.

W. S. Henderson, V. S. (O. V. C., '87), Carberry, Man. ;
vouchers, W. J. Hinman and F. Torrance.

C. J. Hinckley, V. S. (O. V. C., '93), Odebolt, Iowa ; vouchers,
John J. Repp and J. I. Gibson.

F. A. Ilstrup, M. D. C. (C. V. C., '93), Willmar, Minn. ; vouchers,
J. N. Gould and S. H. Ward.

G. Lawes, (C. V. C., '91), Dysart, Iowa ; vouchers, A. H.
Baker and J. N. Gould.

W. A. McClanahan, D. V. M. (Iowa S. C., '91), Redding,
Iowa ; vouchers, John J. Repp and J. I. Gibson.

Herbert F. Palmer, B. S., D. V. S. (Vet. Dept. Det. Col. of

Med., '94), Detroit, Mich.; vouchers, S. Brenton and Wm. Jopling.

H. A. Presler, M. D. C. (C. V. C., '93), Fairbury, Ill.; vouchers, N. I. Stringer and A. H. Baker.

Geo. A. Scott, V. S. (O. V. C., '86), Independence, Iowa; vouchers, Jno. J. Repp and J. I. Gibson.

C. E. Stewart, M. D. C. (C. V. C., '94), Chariton, Iowa.; vouchers, Jno. J. Repp and G. M. Walrod.

W. Swenerton, V. S. (O. V. C., '94), Carberry Man.; vouchers, W. J. Hinman and F. Torrance.

J. W. Beckwith, M. D. C. (C. V. C., '02), Shullsburg, Wis.; voucher, R. H. Harrison.

A. Bostram, D. V. S. (Iowa V. C., '93), Minden, Neb.; vouchers, A. T. Peters and Jno. J. Repp.

M. V. Byers, D. V. S. (Iowa V. C., '94), Osceola, Neb.; vouchers, Jno. J. Repp and A. T. Peters.

J. W. Cook, V. S., (O. V. C., '82), Duluth, Minn.; vouchers, S. D. Brimhall and C. C. Lyford.

J. H. McLeod, D. V. S. (McGill, '93), Charles City, Iowa; vouchers, J. I. Gibson and W. A. Heck.

Peter Malcolm, V. S. (O. V. C., '90), New Hampton, Iowa; vouchers, Jno. J. Repp and W. A. Heck.

Richard Price, V. S. (Montreal V. C., '81), St. Paul, Minn.; vouchers, B. D. Pierce and S. D. Brimhall.

L. U. Shipley, D. V. S. (C. V. C., '91), Sheldon, Iowa; vouchers, J. N. Gould and Jno. J. Repp.

Archibald A. Keys (Montreal V. C., '85), Minneapolis, Minn.; vouchers, Chas. E. Cotton and S. H. Ward.

CHARGES DISMISSED.

In the matter of charges of unprofessional conduct against Dr. Charles E. Cotton, of Minneapolis, Minn., which were lodged with the Executive Committee at the Atlantic City meeting, the accused appeared before the Executive body with a full statement, supported by documentary evidence; and, after a full hearing, the committee unanimously recommended that they be dismissed, which recommendation was adopted by the Association. The doctor, who has felt keenly the stigma placed upon his name, was heartily congratulated by his many friends.

RESOLUTIONS ADOPTED.

Tuberculosis.

WHEREAS, In the repression of tuberculosis of cattle it is of the highest importance that the disease shall, so far as possi-

ble, be confined to the localities already infested, and

WHEREAS, Every hindrance to the shipment of tubercular cattle into the United States from one State to another, or from one farm or district to another, helps to confine the disease and to lessen the difficulties attending its final eradication ; be it

Resolved, That this association approves the establishment and maintenance of Federal and State laws and regulations to prevent the transfer of tubercular cattle from place to place, excepting in quarantine.

Clinics.

WHEREAS, For several years it has been the custom to offer clinical demonstrations as a part of the programme of our annual meeting ; and,

WHEREAS, It has become apparent that these clinics are a source of great interest and profit to a large number of the members ; therefore, be it

Resolved, That we favor the continuance and yearly improvement of this feature of our meetings by including other than surgical cases and the exhibition of pathological specimens, and if it be necessary in order to enable the local committees of arrangement to better perfect these clinics and make them more worthy such a scientific body, it would be well for the association to render additional assistance by appropriating such a sum of money as may be necessary to accomplish the purpose.

Texas Fever.

WHEREAS, The Cotton States Association of Commissioners of Agriculture at their annual meeting held in the city of Nashville, Tenn., August 26th to 28th, 1902, passed a resolution providing for the appointment of a committee of three veterinarians connected with the association to investigate the subject of Texas fever among cattle in the area now pronounced permanently infected with the disease, with the object of ascertaining what steps should be taken to render the territory free from infection, and also devise and recommend such measures as will result in the coöperation of the States affected, to the end that Texas fever may be permanently driven out of the infected district, and,

WHEREAS, The above-named association has named as members of such investigating committee three honored members of the American Veterinary Medical Association—Drs. Carey, of Alabama ; Butler, of North Carolina, and Dalrymple, of Louisiana—gentlemen whose intimate acquaintance with the subject

to be investigated is well known, and respected by us. Therefore, be it

Resolved, That we hereby congratulate the Cotton States Association of Commissioners of Agriculture upon the wisdom of their action and the country upon the prospects of an intelligent solution of the great problems connected with this disease, which has and is producing such hardship and pecuniary loss to our Southern States.

State Associations.

Resolved, That it is the sense of this association that it is the duty of State veterinary medical associations to make their conditions for membership conform with those of this association.

Intelligence and Education.

Resolved, That the Committee on Intelligence and Education be instructed to investigate and report at the next meeting upon the organization and work of all American veterinary schools and State examining boards. Be it further

Resolved, That members of the faculties of the various veterinary schools and the members of the State examining boards shall be communicated with and given an opportunity to submit written or oral statements upon the subjects under investigation.

Local Committee of Arrangements.

WHEREAS, The carefully-prepared programme of the local committee of arrangements and the constant and untiring labors of the members of that committee have contributed greatly to the pleasure and success of our meeting; and

WHEREAS, The Commercial Club of Minneapolis has generously assisted the local committee and tendered the freedom of its rooms to the members of this association, and

WHEREAS, The proprietors of the West Hotel have furnished rooms for our meetings, and extended many courtesies; Therefore, be it

Resolved, That we express our appreciation of these many efforts to make this annual meeting a success, and that we tender our sincere thanks to all who have contributed to that end.

Gavel.

Resolved, That the thanks of the Association be extended to Dr. W. T. Monsarrat for the beautiful and novel gavel which he presented at this meeting.

Committee on Standard of Excellence and Soundness.

Resolved, That a committee of three be appointed to formulate a standard of excellence and soundness for horses of various classes, and report at the next annual meeting of this Association.

On the Death of Members.

WHEREAS, It has pleased Almighty God to remove from our midst Dr. RUSH SHIPPEN HUIDEKOPER, of Philadelphia, on December 17, 1901, one of our most esteemed and beloved members, one that had given the greater part of his energetic life to the building and uplifting of the veterinary profession on this continent, and the advancement of the best interests of this association ; we feel that through his death the veterinary profession has suffered an irreparable loss and our association one of its most active members. We not only deplore his death as a member of our association, but we mourn the loss of a true and tried social friend. Therefore, be it

Resolved, That this association extends to his bereaved family the sincere sympathy of its members in their affliction ; and be it further

Resolved, That these resolutions be entered on the records of this association, and a copy sent to his family.

WHEREAS, It has pleased Almighty God to remove from our midst, during the past year, Dr. ROBERT J. SAUNDERS, of West Roxbury, Massachusetts, one of the original members of this association, a man self-sacrificing, conscientious and studious, enjoying the good will and respect of all who knew him ; therefore be it

Resolved, That this association sincerely regrets his loss, and extends to his family its sympathy in their affliction ; and be it further

Resolved, That these resolutions be entered on the records of this association, and a copy be sent to his family.

WHEREAS, It has pleased Almighty God to remove from our midst during the past year Dr. THOMAS F. BARRON, of Baltimore, Maryland ; therefore be it

Resolved, That this association regrets his loss and extends to his family its sympathy in their bereavement, and be it further

Resolved, That these resolutions be entered upon the records of this association and a copy be sent to his family.

WHEREAS, It has pleased the Almighty to remove from our

midst Dr. JOHN FAUST, a valued member of our association, whose death occurred in the month of July, 1901; therefore be it

Resolved, That this association greatly regrets his loss, and extends to his family its sympathy in their bereavement; and be it further

Resolved, That these resolutions be entered upon the records of this association and a copy be sent to his family.

COMMITTEES FOR 1902-1903.

President Stewart announces his committees as follows:

Executive.—Tait Butler (Chairman), J. F. Winchester, H. L. Ramacciotti, F. Torrance, S. Brenton, W. Horace Hoskins, A. H. Baker, and the officers *ex-officio*.

Finance.—J. E. Ryder (Chairman), B. McInnes, and F. Abele.

Publication.—M. H. Reynolds (Chairman), Roscoe R. Bell, R. P. Lyman, C. J. Marshall, and C. W. Gay.

Intelligence and Education.—E. B. Ackerman (Chairman), A. T. Peters, W. J. Hinman, Paul Fischer, and E. M. Ranck.

Diseases.—L. Pearson (Chairman), V. A. Moore, S. D. Brimhall, L. Frothingham and R. R. Dinwiddie.

Army Legislation.—Wm. Herbert Lowe (Chairman), Wm. Dougherty, Austin Peters, M. E. Knowles and Wm. H. Kelly.

Resolutions.—D. E. Salmon (Chairman), G. A. Johnson, N. S. Mayo, G. R. White, and Alexander Burr.

Pharmacopœia.—L. A. Merillat (Chairman), Roscoe R. Bell, D. King Smith, E. L. Quitman, J. J. Repp, E. M. Ranck, and H. D. Hanson.

NOTES OF A. V. M. A. MEETING.

Geographical lines were blotted out at Minneapolis. While at former conventions extreme points of attendance were counted by States, this year they were reckoned by countries. The extreme Northwest was represented by Dr. Loveberry, in charge of Bureau of Animal Industry cattle inspection at Seattle, Washington, who traveled 3000 miles in order to be present at the great veterinary gathering. From far-away Hawaii, in the Sandwich Islands, came the genial Dr. W. T. Monsarrat, who was as much at home among the members and their wives as though he was inspecting cattle for the Honolulu Board of Health on that sea island. Although he had traveled thousands of miles to carry out a dream of years, there was present one who had journeyed a greater distance, for Dr. Olof Schwarz-

kopf, of the United States Army, landed at the convention fresh from the Philippines. Mrs. Schwarzkopf went up from Chicago on the "special" to meet her husband, and, while far from being well, maintained her courage with heroism until after the meeting with her long-absent consort, when her strength gave away, and all through the convention she was confined to her room. The farthest point South had a representative in Dr. Dalrymple, of Louisiana, while the intermediate Southern States sent Rayen and White, of Tennessee, and Butler, of North Carolina. The East sent delegates from its entire seaboard; the West from Montana to Arizona, and the interior States filled the convention hall. The Dominion of Canada took a prominent position both in the representation of her profession and in the deliberations of the convention. Dr. J. G. Rutherford, Dominion Veterinarian, and Dr. Fred. Torrance, of Manitoba, were prominent speakers in the meeting and at the banquet, while other veterinarians from the "frozen country" were scattered through the meeting.

While many had expressed doubts as to the innovation introduced at this meeting in having the ladies attend the banquet, no such perplexity will confront another local committee of arrangements, for the story of the wonderful improvement in the evening's pleasure will be told by all who were present at Spring Park. While only two numbers were assigned to the sixty or seventy ladies who sat at the long tables, they were so well and acceptably performed that at the next banquet a greater number of ladies will undoubtedly be asked to take part in the entertainment. The charming soprano voice of Mrs. S. D. Brimhall was a delight, and replaced some dull speeches at former banquets in a manner that pleased all: Mrs. A. H. Baker's first effort at speech-making was a pronounced success, and while short, was long enough to give promise of a "real speech" at another meeting. Dr. J. G. Annand sang with a delightful tenor, responding to *encores*, and adding much to the pleasure of the evening.

The trip from Minneapolis to Spring Park on Thursday will never be forgotten by those who were the guests of the local veterinarians. After a railroad ride of about ten miles, the guests (more than 200) boarded the steamer Puritan and a barge on Lake Minnetonka, and a more picturesque and beautiful sail could not possibly be secured. Everybody was in the happiest mood; a band played dance music, while those of the guests who knew how tripped the "light fantastic," the others

looking on, or gathered in groups at various points on the decks, admiring the splendid scenery and engaging in conversation. Dr. Annand was the official guide. As the boats passed up the lake, whose banks are studded by the expensive summer homes of influential Minnesotans, he called them by name with an exactness which inspired confidence in his familiarity with the locality. While the lake is only about 30 miles long, the shore line is more than 300, so uneven are its borders, which present a perfect succession of inlets and projecting points, and while it constitutes a single sheet of water, it is so nearly divided into two lakes at one point as to leave room only for a small vessel to pass through the strait. As the "narrows" were approached the guide in that clear tenor voice which later delighted the banqueters, announced that the boats would soon pass into a second lake. A guest called back with the interrogation, "What's the difference?" Without a moment's hesitation the doctor said: "You will observe the blue color of the water in this lake;" and everybody peered into the bottomless basin through which the boat was plowing. "Well," continued the silver-tongued Annand, "when we get into the next lake the water will be the same color."

An Eastern party consisting of Drs. J. Elmer Ryder, E. B. Ackerman, and Roscoe R. Bell, and their wives, visited the Union Stock-yards, Chicago, on the going trip, and were shown all points of interest by the Napoleon of that great horse market, Mr. Newgass.

Never before was there such an interest shown in the literary programme, almost every paper being discussed until the President closed off the debate through the consumption of the allotted time. The members kept their chairs as though riveted to them, no matter whether the subject was the germ of Texas fever or the cheapening of equine rations by substituting molasses and cotton-seed meal for oats and corn.

Dr. M. E. Knowles, of Montana, was a very badly frightened delegate on Tuesday afternoon. Mrs. Knowles was suffering with a sick-headache, and to relieve it took too large a dose of acetanilid, which reacted upon her heart, and, for a time, the physician who was hurriedly called could not tell if the heart would regain its normal condition. By evening, however, the entire convention was relieved by favorable reports from the sick room, and before the close of the meeting Mrs. Knowles was a safe convalescent.

A regretted omission at Minneapolis was the failure to se-

cure a photograph of the members, as was done at Nashville, Detroit, and Atlantic City. Many of the members stated that they had them all framed and hanging upon the walls of their libraries, they being frequent reminders of familiar faces and pleasant features of former gatherings. We would suggest to future committees the making of definite arrangements for this feature.

Dr. F. H. Ruhl, of Fairmount, West Virginia, had the misfortune to lose his gold watch in a crush on a trolley car in Chicago. He held on, however, very tenaciously to a box of "stogies," which he brought from the State of his adoption for the members.

Records were knocked sky-high in the matter of new members admitted. Sixty-six gentlemen were favorably reported upon by the Executive Committee and duly elected, a few of whom were reinstatements. They were not confined to the vicinity of the place of meeting, but came from all sections.

Dr. Bell, of the REVIEW, prepared a paper upon the subject of "The Legitimate Field of the A. V. M. A.," which was in the nature of a reply to the arguments of certain members who feel that practical papers and surgical demonstrations should be omitted from the programmes of the National organization. It was very apparent to him that no plea for the practical side of national association life was necessary, as the members demonstrated by their every action that they not only wished to continue as they had always done, but that if any changes were to take place that the clinics should be increased and rendered more efficient. As the paper came late on the programme, the time being very limited, and as there was no real good to be accomplished, he made a statement of the case and turned it over to the Publication Committee. It will also be printed in the REVIEW. If anyone doubts that the members are in earnest in this matter he should read the resolution adopted, which is published elsewhere.

One of the most pleasing incidents of this great gathering of veterinarians from all quarters of the Western continent to us was the universal commendations expressed of the AMERICAN VETERINARY REVIEW. Almost every one subscribes regularly for it, and many claim that next to the colleges and the A. V. M. A., it is doing more for veterinary progress than any other factor. They spoke of it with the greatest affection, one claiming that he would be willing to forego breakfast and supper three days a week rather than be without it. Another said that

during a recent serious illness, at a point when three consulting surgeons had said that he only had a day longer to live, the current number of the REVIEW arrived. He caught a glimpse of its pale-green cover, as it was laid upon the table near his bed, which at once aroused his interest, and a member of his household was requested to read to him some of its contents. It revived him, took his mind into different channels, and in a few days the entire number had been read aloud to him, with the result that he was so far improved as to be out of danger. If the American veterinarians' journal can do so much for bodily ills, it should be a panacea for all intellectual weaknesses.

A representative of the International Live Stock Association appeared before the meeting and invited all who could do so to visit their great live-stock show in Chicago the first week in December. He wished particularly to have a number of veterinarians there on Thursday of that week, as there would be in attendance on that day surely (and possibly all the week), ten German veterinary students, who were sent over by Emperor William's government to study American stock conditions.

There were about 160 in attendance at the clinic at the Experiment Farm. When it is considered that this was held upon an extra day, a number of members and visitors having been compelled to leave at the close of the meeting on account of their inability to secure longer leaves of absence, and that few meat inspectors, experiment station workers, and others engaged in sanitary specialties, were there—the attendance was phenomenal and wonderful. Every eye and every ear was engaged with the work before them, and, while the clinic was slow in getting down to work, it was fraught with great interest and benefit. The intelligent questioning of the operators by selected surgeons—an *impromptu* agreement—was a great aid in bringing out salient points. Strict order was maintained, the arena being always clear of intruders, so that one could see just as well as another.

Visitors inspected the new "Veterinary Building" of the Experiment Farm, and while no degree-giving school is maintained, the facilities for teaching veterinary medicine are as well adapted for the purpose as almost any school in the country; and it looks to an outsider as though Minnesota was heading for a veterinary college with a curriculum, staff, and other facilities for making future members of the A. V. M. A.

There were 94 old members and 35 members-elect in attendance, which places 129 members as the American record,

and in all probability that of the world, for a veterinary meeting. There were not so many visitors as at Atlantic City; but there were more ladies.

Dr. J. G. Rutherford proved himself a veritable orator, and his remarks were absorbingly listened to, whether they dealt with scientific problems, international comity between Canada and the United States, or his amusing experiences as an embryonic Indiana practitioner, where the meaning of his sign of "Veterinary Surgeon" was so little understood by the natives that he left the town in disgust. He made an eloquent plea for the Association to meet in Ottawa next year, and many with whom he conversed thought we might do much worse, as there is a great field in Canada, which would by contact benefit both the Association and the profession of that section. He said there were about seventy practitioners in that vicinity, who were ours for the coming.

Dr. Monsarrat (who soon became known to each attendant, and finally earned the soubriquet of "Honolulu Bill"), invited the Association to Hawaii, but as he could not guarantee the usual one and one-third rate, there seemed to be little prospect of his succeeding in his well-meant efforts. Dr. Knowles' usual Helena invitation has somewhat better chances, but even his whole-souled and sincere pleas will probably fail for the present.

Dr. Wm. Dougherty was on hand, after his European trip in search of relief from his old enemy, rheumatism. We regret that, while he appeared to look well, he complained of pains in his knees continuously. His old friend, Dr. Jas. L. Robertson, was his constant companion.

The "veterinary special" train on the C., M. and St. Paul Railway, in charge of Drs. Baker and Hughes, carried about 90 members and visitors, who were tendered a splendid collation on board, through the courtesy of the hosts. It was a most enjoyable occasion, but on account of a wreck on the track, was four hours late in reaching the convention city. The officers of the meeting postponed convening time from 10 A. M. to 2 P. M. in consequence. Certain of the travelers, who have always found difficulty in sleeping on a moving train, and congratulated themselves in the morning on the refreshing night's sleep which they had experienced, were chagrined to know that their slumbers were secured while the train was awaiting the clearing of the track.

The full social and pleasure programme was carried out, and the large number of ladies present thoroughly enjoyed it. On

Tuesday afternoon a visit was paid to the buildings and grounds of the University of Minnesota; in the evening an informal reception was given the visitors in the parlors of the West Hotel, thus enabling acquaintances to be formed, which proved mutually advantageous for the rest of the meeting and for all time. On Wednesday morning special cars took the guests to Minnehaha Falls, thence to St. Paul, where stops were made at the Indian Mounds, State Fish Hatchery, and Como Park. On Thursday the local committee took a large party on an inspection tour of the large flouring mills and large saw-mills. In the afternoon the entire company of ladies and gentlemen were taken by special train to Wayzata, where a steamer was boarded for a most delightful sail on Lake Minnetonka, landing at Spring Park, where the banquet took place at the Hotel Del Otero. On Friday, after the clinic at St. Anthony Park, the entire company visited the State Fair, where 250 seats on the grand stand had been reserved for them by the Fair Association. They greatly enjoyed the races, the usual fair spectacles, and particularly the splendid display of live stock.

A new and novel feature was the publication by the local committee of a beautifully printed and illustrated programme of twelve pages, giving all information concerning the various events transpiring, including the social entertainments. The illustrations included "The Falls of Minnehaha," "Scene on Lake Minnetonka," "University Buildings," "Loring Park," "Court House," "Minneapolis in 1857," "Indian Mounds and Fish Hatchery," "Scene in Como Park," "Library Building," "Old Tower at Fort Snelling," "Milling District," "Lake Minnetonka," "Veterinary Building, University of Minnesota," "Agricultural Department, University of Minnesota," "Central High School," "West Hotel," "The First House."

NEW YORK STATE VETERINARY MEDICAL SOCIETY.

The twelfth annual meeting was called to order in the large assembly hall of the Wilson Building, Pierrepont and Fulton Streets, Brooklyn, on Tuesday, Sept. 9, at 10 A. M., by the President, Prof. James Law, and although it was raining in torrents, the room was well filled, with a few ladies in the rear seats.

After calling the meeting to order President Law introduced Hon. Richard Young, Park Commissioner of the Boroughs of Kings and Queens, who welcomed the Association to the city

in a real hearty manner, telling them of the city's wonderful parks and boulevards, forming the finest system of driveways in the world. He said that when he observed the advent of the automobile he thought the veterinarian's sphere would be greatly diminished ; but that he was now convinced that the horseless carriage was but a fad, and that the horse would ever be the ideal mode of transportation, whether for business or pleasure. He congratulated the Association on its progress, on the fact that the great universities were including the science of veterinary medicine among their regular departments, and predicted a great future for us."

Prof. Law replied to the Commissioner's welcome, tendering him the thanks of the Society for his cordial words, and incidentally showing him that our profession not only dealt with the horse, but was the barrier standing between the human family and the great number of contagious diseases that are transmissible from animals to mankind, and that they had made a record in the prevention and eradication of animal scourges that had saved millions in money to the Nation. He said that the Commissioner's references to the city of Brooklyn reminded him of the fact that it was at the foot of Joralemon Street, in this city, that a cow landed on American soil in 1843, bringing with her the first case of contagious pleuro-pneumonia to this country, and that it slowly but steadily spread, until in 1885 it was found among the dairy herds of the city of Chicago. It was then that the Federal Bureau of Animal Industry took vigorous hold of the plague, and in five years completely drove the disease from this continent—a work which has never been equalled in the history of the world. He predicted that the disease would never again get a foothold in this country.

Following this the President delivered one of the most carefully-prepared and scholarly addresses that we have ever listened to. We shall not here attempt to synopsize his remarks, but will in an early issue of the REVIEW publish it in full.

The roll-call was omitted, and the attendance was ascertained by means of a register passed among those present. This register showed the following to be present at the meeting and at the clinic :

THOSE IN ATTENDANCE.

Members and Visitors.—Drs. E. B. Ackerman, Brooklyn ; E. F. Alexander, Hoosick Falls ; Charles S. Atchison, Brooklyn ; Samuel Atchison, Brooklyn ; Roscoe R. Bell, Brooklyn ;

George H. Berns, Brooklyn ; A. W. Baker, Brasher Falls ; W. L. Baker, Buffalo ; A. Barradell, Pawling ; H. J. Brotheridge, Brooklyn ; H. E. Bates, South Norwalk, Conn.; C. E. Burchsted, Exeter, N. H.; F. F. Bushnell, Winsted, Conn.; E. M. Casey, Oxford ; D. W. Cochrane, New York ; Charles Cowie, Ogdensburg ; A. J. Dodin, Morrisania ; Thomas H. Doyle, New York ; Wm. F. Doyle, Brooklyn ; J. F. DeVine, Goshen ; Robert W. Ellis, New York ; W. E. A. English, Jersey City, N. J.; P. A. Fish, Ithaca ; Otto Faust, Poughkeepsie ; H. D. Gill, New York ; George J. Goubeaud, Brooklyn ; G. W. Gilbert, Bayport, L. I.; E. Hanshew, Brooklyn ; H. D. Hanson, New York ; F. R. Hanson, New York ; Geo. S. Hopkins, Ithaca ; Wilson Huff, Rome ; R. C. Jenks, Ossining ; L. B. Judson, Winsted, Conn.; R. E. Jones, New York ; E. H. Judkins, New Paltz ; M. Kenny, New York ; Wm. Henry Kelly, Albany ; Geo. A. Knapp, Millbrook ; H. W. Kornobis, Brooklyn ; James Law, Ithaca ; A. M. Leek (veterinary student), Highwood, Conn.; Geo. W. Meyer, New York ; R. W. McCully, New York ; R. A. McAuslin, Brooklyn ; W. T. McCoun, Oyster Bay ; V. A. Moore, Ithaca ; C. D. Morris, Binghamton ; W. B. Moorehouse, Tarrytown ; Andrew R. Morris, New York ; Edward J. Nesbitt, Poughkeepsie ; L. Nicholas, New York ; Arthur O'Shea, New York ; T. F. O'Dea, Saugerties ; R. Perkins, Warsaw ; C. R. Perkins, Warsaw ; Thomas M. Quinn, Astoria ; A. K. Robertson, Brooklyn ; J. L. Ronan, Corning ; Charles Schroder, Brooklyn ; C. E. Shaw, Brooklyn ; H. E. Stark, New York ; H. D. Stebbins, West Winfield ; G. F. Stone, Binghamton ; Harry Sutterby, Batavia ; T. G. Sherwood, New York ; A. G. Tegg, Rochester ; A. J. Tuxill, Auburn ; E. F. Voorhis, Owego ; James W. Walker, Brooklyn ; E. Waters, Brooklyn ; R. E. Waters, Gravesend ; W. J. Wadsworth, Cobleskill ; LeRoy Webber, Rochester ; R. M. Weightman, Waterville ; A. G. Wicks, Schenectady ; W. L. Williams, Ithaca ; J. L. Wilder, Dunkirk ; H. E. Wilson (veterinary student), Brooklyn—(79).

Delegates from the Veterinary Medical Association of New Jersey.—Drs. Ernest Buckley, East Orange ; J. M. Everitt, Hackettstown ; J. B. Hopper, Ridgewood ; J. V. Laddey, Arlington ; J. Payne Lowe, Passaic ; Wm. Herbert Lowe, Paterson ; Werner Runge, Newark ; S. S. Treadwell, Englewood—(8).

Ladies.—Mesdames E. B. Ackerman, Brooklyn ; Roscoe R. Bell, Brooklyn ; Charles Cowie, Ogdensburg ; H. D. Hanson, New York ; James Law, Ithaca ; J. L. Wilder, Dunkirk ; W. L. Williams, Ithaca—(7).

Other Visitors.—A. R. Davidson, Brooklyn; John A. Dunn, Brooklyn; T. F. Krey, New York; Hon. Richard Young, Brooklyn—(4).

MEMBERS ELECTED.

The following veterinarians were elected to membership:

Drs. Harry W. Kornobis, Brooklyn; R. C. Jenks, Ossining; Richard M. Weightman, Waterville; Ernest F. Alexander, Hoosick Falls; Otto Faust, Poughkeepsie; H. J. Brotheridge, Brooklyn; Geo. A. Knapp, Milbrook; Edward J. Nesbitt, Poughkeepsie; Robert J. McAuslin, Brooklyn; Geo. W. Meyer, New York; C. R. Perkins, Warsaw; Thos. M. Quinn, Astoria; E. H. Judkins, New Paltz; Chas. Schroder, Brooklyn; Andrew R. Morris, New York; James W. Walker, Brooklyn; D. W. Cochrane, New York; Wm. J. McKinney, Brooklyn; LeRoy Webber, Rochester; Herbert Sheldon Sackett, Brooklyn; Frank Hunt, Jamestown; C. E. Shaw, Brooklyn; A. G. Tegg, Rochester, and R. E. Waters, Gravesend.

COMMITTEE REPORTS.

The various standing committees reported. The Legislative, through Chairman Kelly, that no legislation had been asked for by the profession during the past session, and that no pernicious acts were allowed to get on the statute books.

Dr. Berns, Chairman of the Committee on By-Laws, said there was nothing for his committee to report.

Dr. Bell, of the Arrangements Committee, said that all was in readiness for a good meeting; the clinic a fine prospect; the social features well arranged, and that nothing had been left undone to make the meeting a perfect success.

THE CHARGES AGAINST DR. MORRIS.

From the Executive Committee came a most important report in relation to the charges preferred at the meeting of 1901 against former Secretary Claude D. Morris by Dr. Thomas G. Sherwood. The committee summoned Dr. Morris before it and listened to his defence very carefully, occupying about two hours in its deliberations. They then presented the following report:

(1) That Dr. Morris was indiscreet in using this Society's paper in writing a personal letter to the Secretary of War.

(2) That Dr. Morris was indiscreet in stating in said letter that "the profession at large is not at heart for the enactment of this measure."

This Committee feels that while Dr. Morris failed to exercise due discretion, they do not think that his purposes were such as to warrant the imposition of any penalty.

The report was received, and Dr. Bell moved that the defendant be tried in open session ; saying that he had been summarily expelled from the American Veterinary Medical Association ; that this society had been criticised for not having done the same last year, and he thought that every member should know every detail of the case, so that he might vote according to his own conscience. This motion was seconded and carried. The defendant then asked if he should consider himself on trial, and when informed that he was, asked that his trial be in executive session. Those present who were not members were asked to withdraw, and the society was declared to be in executive session. Dr. Morris then made a full review of the case from his standpoint, after which it was moved and seconded that the report of the Executive Committee be adopted, which was carried, there being only one dissenting voice.

When this incident was closed the Society proceeded to the

READING AND DISCUSSION OF PAPERS.

Dr. Robert W. Ellis, of New York, presented his paper on the subject of "Veterinary Dentistry," and a very interesting one it was. He dealt with the physiology and mechanism of mastication, and the objects of dentistry, particularly the "floating" of the teeth. The members evidently considered the subject an interesting one, for they discussed it just as long as the Society would permit them to do so, and through the discussion many very practical points were brought out. Among those taking a prominent part in the debate were Drs. Williams, Gill, Hanshew, Lowe, and W. L. Baker.

"The Etiology of Shoe-Boil" was the subject brought forward by Dr. George J. Goubeaud, of Brooklyn. The doctor has for a long time held a radical view upon the causation of this very common condition, and some two years ago presented a similar paper to the Veterinary Medical Association of New York County. The generally accepted theory has always been that the hygroma so often seen at the point of the elbow is caused by the animal lying upon its shoe or foot. But the essayist claims that these enlargements are never so produced ; but that they are occasioned by the animal striking a quick, sharp blow with the point of the elbow in the act of rising. He points out that in rising the foot is extended, the knee flexed, and as he springs upward the point of the elbow strikes against the floor, and the cystic condition found subsequently is the result of that contusion. He produced many arguments in favor of his contention, and we believe he made many converts to his way of

reasoning. His paper was very thoroughly discussed, those taking part in it being Drs. Williams, Stebbins, Bell, Moore, Gill, A. W. Baker and Hanshew.

"Retained Placenta" was Dr. W. L. Williams' subject, and he very thoroughly described the pathology of the abnormality, giving the best methods of removing it. He found his auditors much interested in his theme, as evidenced by the numerous questions put to him concerning the condition. Some of those who asked questions or offered suggestions were Drs. Perkins, Fish, and Kenney.

"Syrup as a Food for Horses," by Dr. George H. Berns, of Brooklyn, was a magnet which attracted the most marked attention. The REVIEW had paved the way for the introduction of this subject through its publication of the Porto Rican experiments of Dr. Gerald E. Griffin, and the French method of feeding molasses as told in Prof. Liautard's "European Chronicles"; so that the audience was prepared to hear the question presented in a practical way by this very intelligent practitioner and student of current events. We have thought that to the every-day practitioner no economic nor scientific subject could be of more interest or importance to them, and so we have, even with the crowded condition of our pages, reproduced elsewhere the article in its entirety. At the clinic on the following day, Dr. Berns had one of Arbuckle Bros.' truck teams brought to his infirmary for the inspection of the Society, and a pair of horses in finer working condition would be very hard to find. Dr. Berns' views as to the reasons for the dietetic value of molasses seemed to the audience as very sound. Those who discussed the subject were Drs. Bell, Morris, Fish, and others.

"Mallein" formed the basis of Dr. H. D. Gill's didactic lecture, and he spoke with the confidence of one who had had great experience with the serum. He argued that under proper conditions mallein was as positive in its results as tuberculin, and the failures reported were mostly due to employing it under conditions where its use is contraindicated. Almost everybody present had positive ideas on the subject, prominent among whom were Drs. Ackerman, Berns, and Williams. A motion had to prevail to stop the discussion, else it would have kept on indefinitely.

The hour was getting late; there were many papers yet to be read, and that paramount subject, "The Enforcement of Our Veterinary Laws," was still to be considered. Nothing must interfere with that. So Dr. Hopkins' paper, Dr. Fish's paper,

"Interstitial Hepatitis of Swine" by Dr. V. A. Moore, "Veterinary Dentistry" by Dr. Childs, "Laryngeal Paralysis, or so-called Cerebro-spinal Meningitis" by Dr. Gill, and "The Diagnosis of Anthrax" by Dr. Moore, must give way for the subject which demands immediate and vigorous action.

Dr. Kelly did not read a paper, but spoke from the standpoint of one who was very conversant with the existing conditions. He was not even prepared to say what was the best method to have the laws enforced; he knew that graduates from two-year schools and unlicensed non-graduates were constantly settling down to practice in New York State, and that the longer they were unmolested the harder it would be to uproot them and prevent others from entering the field. Other members added to his facts, and finally Dr. Bell introduced the following resolution, which was unanimously adopted:

PROSECUTING COMMITTEE.

It was moved and adopted unanimously that a Prosecuting Committee of three members be appointed by the President; the duty of said Committee to be to employ competent counsel to prosecute illegal practitioners in the State of New York, and that the said Prosecuting Committee be authorized to solicit voluntary subscriptions from the members of the Association and from registered veterinarians throughout the State by authority of the Society and in behalf of the Society, for the purpose of defraying the expenses of such prosecutions.

RESOLUTIONS ADOPTED.

WHEREAS, The Pennsylvania State Veterinary Medical Society has seen fit to criticize the action of this society as to its method in dealing with one of its members, and

WHEREAS, This society feels that it is perfectly capable of administering its own by-laws, in its own way, without the advice, sanction or interference of those from without its membership; therefore be it

Resolved, That this society regards as indiscreet, discourteous and gratuitous the resolution passed at the last annual meeting of the Pennsylvania State Veterinary Medical Association.

Resolved, That the New York State Veterinary Medical Society recognizes in the death of Rudolf Virchow, pathologist, scientist and statesman, an irreparable loss to medical science and humanity; a man of universal genius and a benefactor of mankind, who, starting early in life in advance of his

line, maintained that standard throughout his long career.

In recognition of these qualities, we manifest the same by silent vote in rising.

PROPOSED AMENDMENTS TO THE CONSTITUTION.

We, the undersigned members of the New York State Veterinary Medical Society, offer the following amendments to Article V. of our Constitution:

"To strike out the word 'fifteen' and substitute 'twenty-five' in the fourth line.

"To strike out the word 'two' and substitute 'two or three' in the sixth line."

We also beg to offer the addition of a new article, to be known as Article No. VII, to the Constitution, to read as follows:

"That a standing committee of three members be appointed as a Committee on Resolutions." (Sgd.) GEO. H. BERNS.

W. L. BAKER.

At the conclusion of the discussion and adoption of the resolutions creating a Prosecuting Committee, the selection of the next place of meeting was taken up. Three candidates were placed in nomination, as follows: Ithaca, Brooklyn, and New York; the balloting resulted in the selection of Ithaca, it receiving 26 votes, Brooklyn 11, New York 8.

The convention then adjourned to meet at the infirmary of Dr. George H. Berns, 74 Adams Street, to witness and participate in

THE SURGICAL CLINIC,

which proved a very instructive and interesting feature. The arrangements were splendidly planned, they began promptly on time, the business was dispatched with as much alacrity as was consistent with thoroughness, and we predict that this feature has done as much to demonstrate the mutual benefit which can be secured from an association of veterinarians as anything possibly could do.

One feature of this clinic will be that at the next meeting (and earlier through the REVIEW) Dr. Berns will report the results of the operations, so that the value of the procedures will be definitely known.

The following cases were presented:

- I. Practical demonstration of the use of the ophthalmoscope for the diagnosis of obscure lesions of the eye. By Dr. George G. Van Mater, of Brooklyn.
- II. Enormous enlargement and induration of both parotid

- glands in a gray horse (probably melanosis). By Dr. George H. Berns, of Brooklyn.
- III. Lacerated wound of the inferior abdominal region with protrusion of the intestines and discharge of alimentary matter through wound. By Dr. George H. Berns, of Brooklyn.
- IV. Dropping of stifle, following azoturia, three months' standing. By Dr. George H. Berns, of Brooklyn.
- V. Gelatinous degeneration of the pastern, following plantar neurotomy. By Dr. George H. Berns, of Brooklyn.
- VI. Large cystic tumors of the poll. By Dr. George H. Berns, of Brooklyn.
- VII. Periostitis of pedal bones, both front feet. By Dr. George H. Berns, of Brooklyn.
- VIII. Peculiar action of the stifle and relaxation of the tendon Achilles. By Dr. Wm. J. McKinney, of Brooklyn.
- IX. Aggravated stringhalt of both hind legs. By Dr. Roscoe R. Bell, of Brooklyn.
- X. Suspected case of farcy. By Dr. George H. Berns, of Brooklyn.
- XI. A pair of truck horses doing daily work fed on molassed food for eighteen months (property of Arbuckle Bros.).
- XII. Aggravated case of stringhalt. By Dr. J. L. Robertson, N.Y.
The following operations were performed :
- I. Tenotomy of deep flexors, one front and both hind legs. By Dr. G. A. Stone, Binghamton.
- II. Ovariotomy of mare through vagina (with the privilege to all of passing hand through wound and feeling the parts). By Dr. W. L. Williams, of Ithaca.
- III. Extirpation of membrana nictitans. By Dr. George H. Berns, of Brooklyn.
- IV. Castration of stallion, standing (time, 60 seconds). By Dr. R. E. Waters, Gravesend.
- V. Tenotomy deep flexors both hind legs, donkey. By Dr. George H. Berns, of Brooklyn.
- VI. Tenotomy of lateral extensor of the phalanges (stringhalt operation). By Dr. C. E. Shaw, of Brooklyn. [This is the same horse exhibited by Dr. Bell—No. IX—and the result of the operation will be published in the REVIEW.]
- VII. Extirpation of lateral cartilage for the radical cure of quittor. By Dr. W. F. Doyle, of Brooklyn.
- VIII. Demonstration of the use of a new mechanical tooth float. By Dr. Robert W. Ellis, of New York. (This novel and

practical invention, which is especially suited for "floating" large stables of horses, works by the turning of a crank, somewhat on the order of a clipping machine, and requires but little exertion on the part of the operator. Those who witnessed it pronounced it a wonderful invention, very practical and a great labor saver. It was used in conjunction with the patent halter, invented by the same veterinarian).

- IX. Demonstration of the use of stocks and operating tables.
By Drs. Joseph R. Hodgson, of Brooklyn, and W. J. McGee, of New York.

The time allotted to the clinic having expired, the party left on special trolley cars for Coney Island. But a large number of cases were left over. On the following day Drs. Berns, Ackerman, Sackett, Walker, and C. S. Atchison finished the material on hand, which consisted of tenotomies, neurectomies, and bitch ovariotomies.

NOTES OF THE N. Y. S. V. M. S. MEETING.

Let it never be again said that the veterinarians of New York City cannot arrange a good meeting; and do not intimate that the members of the profession throughout the State will not attend a meeting when a programme which appeals to them is prepared.

A campaign against illegal practitioners was inaugurated which promises to yield good results. It may be safely said now that "something" is going to be done to rid the State of those who have no legal nor moral right to practice in the commonwealth.

The attendance was the largest in the history of the Association, and it was well distributed, members coming from the most distant cities. Although many neglected to register, there were ninety-eight (98) names recorded, which is a very satisfactory turn-out of Empire State Veterinarians.

New Jersey sent over a large delegation of its best men, who expressed themselves as well repaid for their time. Among those at the regular session and at the clinic were Drs. Wm. Herbert and J. Payne Lowe, Werner Runge, S. S. Treadwell, J. M. Everett, J. B. Hopper, Ernest Buckley and J. V. Laddey. A resolution was adopted instructing the President to appoint delegates to the next meeting of the New Jersey State Association, not only to return the courtesy of that body and to encourage such interstate fraternity, but that the delegates may take

note of the best features of the convention, with a view to improving the meetings of the New York Society.

While the Committee of Arrangements worked in splendid harmony, the great success of the clinic was due to the untiring efforts of Dr. George H. Berns, who had secured enough good clinical material to have extended the session for a week. Everyone remarked that the cases supplied were thoroughly practical, being such as are met with almost daily in private practice, and they all felt that by interchange of views they had learned something worth knowing from each case.

The relaxation obtained by the members and visitors, after the meeting adjourned, was greatly enjoyed. It was regretted by the local committee that so many were compelled to return to their homes on the early trains, and thus failed to avail themselves of the hospitality provided for them at Coney Island. However, fifty-six sat at the long table at the Pabst Hotel, on Surf Avenue, and enjoyed a tasteful shore dinner, afterwards "doing" the attractions of that famous seaside resort. We observed some of our staid and venerable members in the thickest of the fight, and from the lightness of their spirits they appeared to be enjoying the innocent amusements so abundantly provided.

Several photographers did a thriving business at the clinic, taking groups in the operating room, and the entire attendance in front of the infirmary, most everyone ordering copies as mementoes of the memorable occasion.

A. V. C. boys were everywhere to be seen, and we heard several express a wish that their old instructor and friend, Dr. Liautard, could be present and enjoy with them such a rare treat. We know how glad he would have been to have spent the day in person where we are sure his heart was.

Applications for membership came thick and fast. A special session was held at the clinic just after lunch, to elect half a dozen belated applicants, and there were several other visitors who became so desirous of being an integral part of the Society by the time the clinic was over that they inquired if it were not possible to hold an extra session for the purpose of admitting them.

We observed three demonstrations under way at one time on several occasions. On the operating table, a tenotomy; in a stall, a dental operation; while in the front clinic room there would be a consultation on a suspected farcy patient or an obscure lameness.

The State Society is now a powerful organization for good ; it has many important functions in regard to the laws governing the profession of the State, and if its authority and influence are wisely directed, it should make a great improvement in the condition of the profession. For instance, its authority is supreme in forming the *personnel* of the Board of Veterinary Medical Examiners ; it has the power to prevent the practicing of other than licensed veterinarians, and through its well organized forces it can prevent the passage of pernicious legislation.

MISSOURI VETERINARY MEDICAL ASSOCIATION.

The eleventh annual meeting was called to order at 9 A. M. in the assembly hall of the Board of Education Building, northwest corner of Ninth and Locust Streets, St. Louis, Mo., by Dr. Chas. Doenie, of Boonville, Mo., Vice-President, the President, Dr. J. W. Conaway, being absent on account of ill health.

The following members and visiting veterinarians were present : Drs. F. F. Brown, H. Bradley, C. W. Crowley, Chas. Ellis, F. A. Goodbody, L. M. Klutts, B. F. Kaupp, R. A. Kammerer, D. F. Luckey, T. J. Menestrina, S. Stewart, A. Darling, H. B. Piatt, Ray J. Stanclift (8th U. S. Cavalry), J. M. Watson, W. H. Meadors, T. W. Scott, H. Timmermann, D. G. Painter, R. J. Sollberger, F. W. Hopkins, N. C. Powell, F. L. Combs, R. F. Eagle, J. J. Hougendobler, A. J. Hammerstein, D. C. Burnett, T. B. Pote, W. F. Heyde, and U. G. Houck.

The minutes of the previous meeting held in Kansas City, Oct. 22 and 23, 1901, were read and approved.

Under "Communications and Correspondence" the Secretary read a letter from Dr. W. Horace Hoskins, of Philadelphia, Pa., in regard to attending the National Association to be held in Minneapolis, Sept. 2, 3, and 4, 1902. Also a letter from Dr. E. Brainard, of Memphis, Mo., sending regrets at his inability to attend.

Vice-President Chas. Doenie then appointed Drs. D. F. Luckey and L. M. Klutts on the Committee on Elections in the place of Drs. W. E. Martin and F. W. O'Brien, who were absent.

Under the head of "Applications for Membership" the names of the following veterinarians were presented : Drs. A. Darling and F. A. Goodbody, St. Louis; Oscar Stuart, Florida; Win. McEachran, Louisiana; Jas. Mahon, Carrollton; E. Brainard, Memphis, and Arthur Fickett, Kansas City.

Dr. D. F. Luckey moved that Dr. R. A. Kammerer be instructed to cast the vote of the Association for the above applicants to become members of the Association. Seconded and carried.

Dr. S. Stewart then placed in nomination the name of Dr. D. F. Luckey, of Columbia, for President for the coming year. A motion was made, which was seconded and carried, that Dr. Luckey be elected by acclamation.

Dr. Chas. Ellis then placed in nomination the name of Dr. R. A. Kammerer, of St. Louis, for Vice-President. Dr. H. B. Piatt moved that the Secretary be instructed to cast the vote of the Association for Dr. Kammerer, which was seconded and carried.

Dr. D. F. Luckey placed in nomination the name of Dr. B. F. Kaupp, of Kansas City, for re-election for Secretary-Treasurer. A motion was made, seconded and carried, that the Secretary be re-elected by acclamation.

The Secretary then read a report for the Secretary-Treasurer for the past year. Dr. S. Stewart made a motion that the reports be accepted as read, which was seconded and carried.

Dr. D. F. Luckey then gave a good and interesting address upon the subject of State veterinary legislation, pointing out some of the obstacles in the way of securing needed veterinary legislation in the State of Missouri. It was moved by Dr. S. Stewart that the President appoint a committee of three on State veterinary legislation and to make an attempt to secure needed legislation during the next session of the State legislature; seconded by Dr. Chas. Ellis and carried.

It was then moved, seconded and carried that the meeting adjourn for luncheon.

At 2 o'clock p. m. the meeting was called to order by the Vice-President, Dr. Doenie, when the following programme was presented :

"Puerperal Mania in Bovines," by Dr. E. M. Nighbert.

"Complications in Colic," by Dr. S. Stewart, who went thoroughly into the subject and the paper brought out a good discussion by Drs. A. Darling, L. M. Klutts, D. F. Luckey, Chas. Ellis and others.

"My Practical Experience Since Our Last Meeting," by Dr. L. M. Klutts, which paper was interesting and brought out a good discussion.

Following these papers a number of interesting cases were reported.

At 6 o'clock it was moved, seconded and carried that the meeting adjourn to the northeast corner of Sixth and Chestnut Streets, where the veterinarians present were royally banqueted by the veterinarians of St. Louis.

At 8 o'clock the meeting was again called to order, when the following papers were presented:

"Differential Diagnosis of Actinomycosis and Tuberculosis," by Dr. R. F. Eagle. After the reading of this valuable paper a motion was made by Dr. S. Stewart, which was seconded and carried, that the courtesies of the floor be extended to the visiting veterinarians, and it was thoroughly discussed.

"Poisoning by Nightshade," by Dr. T. F. Brown.

"Caseous Lymph-Adenitis," by Dr. S. L. Shaw.

Following these papers many interesting cases were reported, after which Dr. Chas. Ellis moved that the following resolutions be adopted, which was seconded by Dr. A. Darling, of St. Louis, and carried:

WHEREAS, The A. V. M. A. has established the precedent of holding meetings in cities where national and international fairs are held, and

WHEREAS, An international fair will be held in St. Louis in 1904, and

WHEREAS, No meeting of the A. V. M. A. has been held in the State of Missouri, and

WHEREAS, The foregoing circumstances make St. Louis the logical city for holding its meeting in 1904. Therefore be it

Resolved, That the Missouri Veterinary Medical Association now in session invites the American Veterinary Medical Association to meet in St. Louis in 1904.

A motion was then made by Dr. D. F. Luckey, which was seconded by Dr. Chas. Ellis and carried, that the Association extend a vote of thanks to Dr. R. F. Eagle for his valuable paper.

It was then moved, seconded and carried that the next meeting be held in Windsor, Mo., in 1903, at such time as the officers of the Association and Executive Committee may decide. A motion made by Dr. Stewart, which was seconded and carried, that a vote of thanks be extended to the local committee and other veterinarians of St. Louis for their hospitality.

At 11 o'clock, by a motion, which was seconded and carried, the meeting adjourned to meet at Manchester Avenue and Kings Highway, at 9 A. M., Aug. 19.

Tuesday, August 19, at 9 A. M., a clinic was held at Dr. R. A. Kammerer's hospital. The excellencies of the Kansas City Veterinary College operating table were demonstrated by Drs.

F. F. Brown and S. Stewart. Many operations were performed which were participated in by Drs. D. F. Luckey, Ray J. Stanclift, F. F. Brown, L. M. Klutts and others.

At one o'clock the clinic adjourned to luncheon, which was given by the St. Louis veterinarians, after which the afternoon was spent in examining interesting cases presented at the clinic.

The meeting was then adjourned to meet in Windsor, Mo., in 1903.

B. F. KAUPP, *Secretary.*

ILLINOIS VETERINARY MEDICAL AND SURGICAL ASSOCIATION.

This association met in semi-annual session at the Brunswick Hotel, Decatur, August 14th and 15th, 1902, and was called to order by the President, Dr. V. G. Hunt, of Arcola. The roll-call was responded to by a fair number of the membership.

President Hunt's address was delivered in a masterly manner, characteristic only of himself, and was as follows :

"*Gentlemen:*—As we meet to-day we are forcibly reminded of the rapid advancement in every department of the arts and sciences. When we look back a quarter century ago and see where the veterinarian stood, the meagre supply of veterinary literature at his command, the impotency of the healing art, it is not to be wondered at if he should make some fearful mistakes. The only wonder is that he did as well as he did. In surgery no antiseptic precautions were thought of. Still, many of our patients recovered. One fact yet remains to be told. Very few of those bold and difficult operations were not attempted that to-day are of every day occurrence. Surgery has outstripped all the other sciences, has attained a degree of perfection never dreamed of half a century ago. Doubtless if we could brush aside the veil that covers the future, we would still see greater surprises in store than ever before. The live-stock interest is too great to leave a stone unturned to combat every infectious and contagious disease that has already secured a foothold in our own State.

"We are well aware that an alarmist is not looked upon with any degree of composure. Still, this does not relieve the veterinarian of his responsibilities to his patrons. The time was, when a lone horseman at breakneck speed warned the people of Johnstown of impending danger, losing his own life to save that ill-fated city ; they heeded not the warning and the city was destroyed.

"Tuberculosis has come to stay. It has stealthily invaded every part of our State, slowly but surely doing its work. And as man can and does contract this disease from the bovines, is it not worth while to give this disease our earnest consideration? Laws should be passed to restrict its ravages, ample appropriations made for the experimental stations with competent men at the helm. How important it is for politics to be eliminated from these appointments—not a 'good, clever fellow,' which usually means a d—d fool, but conscientious men of education, coupled with experience. Then, we may expect results. How often has the worthy veterinarian skulked off in shame when a State veterinarian has been called upon when confronted with a contagious or infectious disease was as dumb as an oyster. Let us hope we have seen the last of this class of gentry. If there is anything that requires keen perception with a little common honesty, it is the position of State veterinarian. It must be admitted the life of a veterinarian is an arduous one, above all the other vocations in life, for the public look with no degree of composure upon his shortcomings, while the human practitioner can attribute a death to 'heart-failure,' an almost meaningless term, which is received in good faith.

"Our societies should sound the timely warning from the house-tops without fear, favor or affection. The veterinarian should devote his whole life to the upbuilding of his self-chosen profession. As the practice of medicine is an incomplete science and will likely always remain so, requiring a practitioner to be a diligent student while attending his every-day practice. Hence, the necessity of our society. Life is too short to gain that perfection required unaided by the society. The man who gets what he has learned along the journey of life and lets it be buried with him, is not a benefactor of his race. Let us encourage every worthy investigator. Be slow in our criticisms. 'With Charity for all, with Malice towards none' is a commendable virtue."

The minutes of the previous meeting were then read and approved by the association.

President Hunt next appointed S. H. Swain, C. A. Hurlbutt, and John Osborne, as a committee to draft resolutions of condolence on the death of Dr. L. C. Pray, of Minonk, Illinois, a charter member of the association, and directed that a copy thereof be sent to the widow of deceased, and also one to be spread upon the minutes of this meeting.

Papers presented were as follows:

"Lymphangitis," by Dr. N. P. Whitmore, of Gardner; "Dermatorrhagia," by Dr. C. A. Hurlbutt, of Stonington, who read a report of a case in his practice which brought forth a very instructive discussion upon the subject. Dr. W. J. Martin, of Kankakee, read the same paper on "Bone Spavin" which he did before the American Veterinary Medical Association in 1900 and published in the proceedings of that meeting. A very excellent paper was read by Dr. J. W. Marsh, of Illiopolis, on the subject of "Erysipelas," which brought out some very interesting and instructive points with reference to this disease; he was responded to by Drs. J. M. Reed and I. M. Luzader. The subject of "Nephritis" was well calculated to bring forth discussion and an excellent paper on the subject was read by Dr. J. M. Reed, of Mattoon, responded to by Dr. D. K. Gooddale.

The second day's session was called to order by President Hunt. Much discussion was indulged in on the subject of eligibility of members, and resulted in the carrying of a motion proposed by Dr. S. H. Swain to empower the Committee on Programme to draft and have printed a circular letter to be sent out to the profession at large in the State.

Dr. S. H. Swain next read a paper on the subject of "Entropion and Ectropion," which was responded to by Dr. R. W. Brathwaite.

A paper on "Eczema," by Dr. V. G. Hunt, of Arcola, was next read and responded to by Drs. R. W. Brathwaite and C. A. Hurlbutt. "Tetanus," by Dr. R. W. Brathwaite, of Champaign, was a very complete and instructive paper, which created considerable interesting discussion. W. A. Swain then gave an account of a case of "Hysteria," which was responded to by Dr. W. J. Martin.

Among the visitors present was Dr. Tiffany, of Springfield, State Veterinarian.

On motion, the date and location of the next meeting was fixed for Wednesday and Thursday, January 14th and 15th, 1903, at the St. Nicholas Hotel, Decatur, Illinois.

W. A. SWAIN, *Secretary.*

GENESEE VALLEY VETERINARY MEDICAL ASSOCIATION.

The semi-annual meeting was held at Rochester, July 17th, 1902. President O. B. French presided. There were present:

Drs. J. H. Taylor, Henrietta ; P. I. Johnston, Wilmington ; J. E. Smith, Webster ; L. J. Palmer, Sonyea ; L. R. Webber, Rochester ; W. E. Stocking, Medina ; D. P. Webster, Hilton ; N. N. Leffler, Geneseo ; Carl Webber, Rochester ; W. G. Dodd, Canandaigua ; A. George Tegg, Rochester.

The morning session included the routine business of the Association. Adjourned to meet at the veterinary hospital of Dr. L. R. Webber, on Andrew St., at 1.30 P. M., at which place a very interesting clinic was held, resulting from the successful efforts of Dr. J. H. Taylor, chairman of the Clinic Committee. There were a great number of operations performed and witnessed by members of the Association.

W. E. STOCKING, *Secretary.*

NEWS AND ITEMS.

DR. O. A. STINGLEY, of Kansas City, has been appointed an assistant inspector in the Bureau of Animal Industry and ordered to Chicago.

DR. RAY J. STANCLIFT, veterinarian 8th U. S. Cavalry, Jefferson Barracks, Mo., recently from Cuba, attended the annual meeting of the M. V. M. A., held in St. Louis Aug. 18 and 19, and also the A. V. M. A., at Minneapolis.

MONEY IN A DOG'S STOMACH.—The stomach of a dog is a peculiar thing to see on the desk of an official of the United States Treasury, but that was the object which E. E. Schreiner recently spread out before him. Mr. Schreiner is chief of the division of redemption of the Treasury and has become accustomed to receiving money under peculiar conditions. Even he, however, admitted the originality of the case in question. "Dear sir," ran the letter which accompanied the stomach, "I send under separate cover stomach of my dog Fritz. I was playing with him to-day, holding a \$20 bill up for him to jump at, when he suddenly leaped higher than I had anticipated, grabbed the bill between his teeth and ran under the house, where he chewed the money up and swallowed it. I thought more of the twenty than I did of Fritz—he was always chasing chickens—so I shot him and cut out his stomach. Please see if you can't paste the bill together and redeem it." "The unique feature of this case," said Mr. Schreiner, "is that we found the bill slightly chewed up, but sufficiently whole to identify and redeem. The man has received a check for \$20 by this time."—(*New York Herald.*)

PUBLISHERS' DEPARTMENT.

Subscription price, \$3 per annum, invariably in advance; foreign countries, \$3.60; students while attending college, \$2; single copies, 25 cents.

Rejected manuscripts will not be returned unless postage is forwarded.

Subscribers are earnestly requested to notify the Business Manager immediately upon changing their address.

Alex. Eger, 34 East Van Buren St., Chicago, Ill., Veterinary Publisher and dealer in Veterinary Instruments, Books, and Drugs, is the authorized agent for the REVIEW in Chicago and the Middle West, and will receive subscriptions and advertisements at publishers' rates.

LAST month, we reminded our readers (through this department) of the debt of gratitude and appreciation that they owe to the advertisers in their magazine; and even while we were writing it, it seems that the manufacturers of another valuable product, were preparing a "bulletin" of information for their inspection, which will be found in this number on page 2 (ad. dept.). The product called attention to by this "bulletin," Glyco-Heroin (Smith), needs no further indorsement than the name of the manufacturers (Martin H. Smith Co., pharmaceutical chemists), to class it among preparations of a fine grade, characteristic of all the pharmaceutical products of that house. But it has the further indorsement of some of the most painstaking practitioners among the REVIEW readers, in the "Case Reports" in the June and September numbers. These reports, the knowledge of the therapy of the drugs employed in its formula, and the reputation of the manufacturers as pharmaceutical chemists, should make this product a very welcome one to the veterinary profession.

"SPANISH ITCH."—Fifteenth Annual Report U. S. Bureau of Animal Industry, says: "The most satisfactory results were obtained by using an emulsion of Zenoleum. This is a coal-tar derivative, rendered alkaline so that when added to water it forms a permanent emulsion without agitation and is a very effective remedy in destroying insect parasites. One part of Zenoleum to fifty parts of water was found to be very effective. It penetrates scab and matted-hair readily, does not irritate the skin or the hands, and is easily and quickly applied. The cost is about three cents per head."

TANNOFORM-MERCK, which is no exception to other valuable preparations of Merck & Co., page 3 (ad. dept.), is attracting especial attention in veterinary practice from its variety of legitimate uses. It is a wonderful article to have in one's satchel at all times, and worth while looking up. Write for their booklet on Veterinary Remedies, and use the REVIEW as your reference.

MULTUM IN PARVO could not be more truly applied than in expressing an opinion of The Abbott Alkaloidal Company's very nice preparations of the active principles. Their advertisement, on the inside of the back cover page, is certainly attractive; but practice, with their alkaloidal preparations, becomes positively fascinating.

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AMERICAN VETERINARY REVIEW.

NOVEMBER, 1902.

All communications for publication or in reference thereto should be addressed to Prof. Roscoe R. Bell, Seventh Ave. & Union St., Borough of Brooklyn, New York City.

EDITORIAL.

EUROPEAN CHRONICLES.

TUBERCULAR IMMUNIZATION.—In one of my last chronicles I related the announcement made by Prof. von Behring that he had succeeded in giving animals, and particularly bovines, immunity against tuberculosis.

This declaration of the illustrious savant was the forerunner of a work which has just been published under the title of "Tuberculosis," in the *Beiträge zur experimentellen Therapie*, which treats only of the first part of his experiments already realized or in the way of execution.

From the consideration of this scientific work two fundamental conclusions are derived, viz. :

(1) *That it is a fact established, resting on positive ground, that, with the aid of an attenuated virus, cattle can be vaccinated against tuberculosis, at least against experimental tuberculosis ; time will tell if, as it is probable, vaccination by the method of Behring will confer as well a sufficient immunity against spontaneous tuberculosis, and if, on the other side, it is applicable in general practice.*

(2) *It is also demonstrated that human and animal tuberculous bacilli differ only by the intensity of their virulence. This, varying for bacilli of a given species of animal, may be experimentally transformed into a stronger or a weaker virulence, equivalent to that of another species.*

Already, previous to the first communication of Behring, Prof. MacFadyean had mentioned in his excellent journal (June, 1901,) the possibility of granting an antituberculous immunization in bovines by successive vaccinations with avairy bacilli and with those of *mamnifaræ*.

The new method of the German professor confers also an idiopathic immunity—that is, through the intermediacy of the virus itself, more or less attenuated. It is based on the same principle as immunization against variola, rabies and anthrax, and consequently differs from the antitoxic or bactericid serotherapy in general, as those used, for instance, against tetanus, diphtheria, pest or cholera. In fact, it is a vaccination that Behring proposes to call *Jennerisation*, the name of *Pasteurisation*, that he would have preferred, being already used to designate a special mode of sterilization for milk.

Behring has observed that immunization against tuberculosis can be obtained with various attenuated bacilli, and principally with those of bovines, as with those of man. But as the accidents are much more severe and lasting when bovine bacilli are used, the Professor has left them aside in practice. He also ignores human bacilli, having a virulence for bovines resembling that of bovine bacilli. And *actually resorts exclusively, as vaccine, on cultures of human bacilli No. 1*, kept for several years at the Institute of Marbourg, which are bacilli obtained from sputas of a tuberculous man. The innocuity of those cultures, used in weak doses, has been tested by numerous trials.

According to Behring, here is the manner to proceed, and is most convenient in practice in the fight against tuberculosis: *Operate on young bovines, from five to seven months old, which have not reacted to tuberculin; give them by intravenous injection a first dose of 0,001 grammes of a culture on serum (No. 1) from four to six weeks old; four weeks later make a second intravenous injection with a dose twenty-five times stronger—say 0,025 grammes of the same culture.*

It is not exactly certain if this second dose is sufficiently

strong as a final dose. Practice and experience will decide those questions later on.

Such is the method of Behring vaccination, which is harmless, simple and not costly.

The acquired immunization is such that vaccinated subjects resist the criterium injection of a dose of very active virus, always fatal for witnesses, which die in a few weeks with miliary tuberculosis, while they present no lesion whatever at the autopsy.

Such are briefly the general outlines of the work of Prof. Behring; of course, the method still needs the consecration of time and experience before it is definitely adopted as useful and applicable in the fight against tuberculosis, but the step forward is immense, and there can be no doubt that success will be the ultimate result in this severely engaged battle.

In relation to the identity, generally admitted, of bovine and human tuberculosis, Behring is categorically in favor of it and confirms all the conclusions of the other observers who have proclaimed it before and since the question was again agitated by Prof. Koch in London.

* * *

ADRENALIN is comparatively a new medicine, but its effects are such that it will not be long before it has obtained a most important place in therapeutics. To the physiological point of view, it is above all a vaso-constrictor of great power, and has a marked action on blood pressure, on circulatory exchanges, and even on the temperature of the body. To the practical point of view, it has also many applications, but at the present time it has two principal ones: (1) in laryngology and ophthalmology as a vaso-constrictor and haemostatic; (2) in general therapy as a haemostatic.

Operations on the nose and nasal cavities in man have been performed easily with its use, and sprays or powders have been advantageously used in inflammation of the nasal cavities.

Ophthalmology has derived much benefit by its use; in 30

seconds after the introduction of a solution of adrenalin in the eye it produces a complete ischæmia of the conjunctiva, which lasts one hour and a half. Adrenalin in such cases has the advantage of producing no trouble of the cornea, and, besides, is without effect on the pupil ; it reduces the lachrymal secretion.

What greater advantages could be expected for the treatment of iritis, glaucoma, etc. Associated with cocaine it has allowed two enucleations of the eye and the arrest of a haemorrhage secondary to the removal of a cataract without pain and without haemorrhage.

Adrenalin possesses many other applications in general therapy, but what I have said is enough to recommend it to veterinarians. How many affections of the eye could be properly and satisfactorily treated, and how many eyes might be saved.

The only objection that can be made is the cost ; it is said to be \$20,000 a pound ; but as the solutions which are used are very weak, the objection is considerably reduced.

* * *

THE QUESTION OF THE USEFULNESS OF VIVISECTION seems to be again the order of the day, and under the heading of "Is Vivisection Indispensable ?" I resume the answer of Dr. Foveau de Courmelles in one of the medical journals of Paris.

A feminine movement is rising against the pain imposed on animals under the pretext of science and of physiological teaching. First laughed at, this movement embraces to-day a great number of physicians, and one can now, without being laughed at, ask if, as a question of education, vivisection is indispensable? Already, in scientific matter, where doubt seems less permitted, it is discussed ; in toxicology, the non-comparability of man and animal shows that the last gives wrong notions for the first ; in anatomy, the cadaver is sufficient ; in physiology, many works to-day left aside show the insufficiency of the information given by the living animals experimented upon. In the domain of education, the impossibility of making every

student perform vivisection, that no less serious one of showing to all, in a hall, a physiological experiment as well as for a surgical operation, do not speak in favor of vivisection. And, again, with anæsthesia, which ought to be resorted to in all cases, where anyone exhibits publicly living animals which they submit to martyrdom under the pretension of showing such or such facts—for all these reasons, those experiments must be stopped ; they prove nothing ; they are made by anyone, and are public schools for cruelty, and vivisection must have scientific limits.

The conclusion of Dr. F. de Courmelles is certainly that of every scientific investigator. Vivisection cannot be prevented, but must be regulated, as it is in many countries. If it was altogether forbidden, how could medical science advance ? Then of what use are all of his first objections ?

* * *

AN UNUSUAL MODE OF INOCULATION.—Of course, when rabies is threatening, no precaution is too great to guard against it, and yet, notwithstanding how numerous the cases of inoculation, of course bites are the most common ; but in any event when the saliva comes in contact with the abraded 'skin, the danger is there. I have read lately of a case which is certainly very curious, I might say exceptional, and yet belongs to the same general condition. It occurred in some town in the lower part of France. A young woman, whose hands were badly chapped, had touched some food upon which a rabid dog had dropped its infectious saliva. A few weeks later the poor woman was taken with symptoms of hydrophobia, and died.

* * *

BIBLIOGRAPHIC NOTES AND ACKNOWLEDGMENTS.—To close this chronicle, I am pleased to acknowledge the reception of the following, and to address their authors my warmest thanks : From the workers of the Bureau of Animal Industry, "Emergency Report on Surra," "Apoplectic Septicæmia in Chickens," "Scabies in Cattle," "American Breeds of Beef Cattle," "Index Catalogue of Medical and Veterinary Zoology,"

"Market Classes of Horses," "Miscellaneous Papers on Animal Parasites," and also the "Seventeenth Annual Report of the Bureau." From our friend, Dr. Dalrymple, his article on the "Value of Coöperation in the Sanitary Control of our Periodic Epizoötics of Anthrax," published in the New Orleans *Medical and Surgical Journal*. From Dr. Samuel S. Buckley the catalogue of the Maryland Agricultural College. And, finally, a "Veterinary Pharmacopœia of Bazaar Drugs," by Dr. J. D. E. Holmes, which contains a long list of indigenous plants of India used in veterinary practice, with their scientific names and their vernacular synonyms, their indications, and doses, etc.—a most interesting little work.

A. L.

TO ENFORCE THE NEW YORK LAWS.

At last the Empire State veterinarians are in position to realize the benefits of the excellent laws to protect the public and themselves which were passed several years ago, and which they have permitted to become inoperative through their supineness and indifference. The REVIEW has felt a certain amount of responsibility in the matter, as the organ of the profession of the State, and has allowed no opportunity to pass wherein it saw a chance to draw the attention of its New York readers to the condition that was rapidly developing. Men without legal qualification were becoming emboldened through freedom from molestation, and were undertaking the prerogatives of regular practitioners. It is self-evident that the longer they are permitted to perform such functions the more difficult it will be to secure their withdrawal or prosecution, should they insist upon standing trial. It is, therefore, with genuine satisfaction that the REVIEW notes the action of the New York State Veterinary Medical Society at its annual meeting in September, when it unanimously adopted a resolution instructing the President to appoint a Prosecuting Committee of three to take up this matter. In doing so the action of the Society was not half-hearted; it did not indulge in meaningless platitudes; but it disposed of the question in the only way that seemed

feasible, and the one which presents the greatest chances of success. It is mandatory that the Prosecuting Committee shall, when supplied with funds for that purpose, engage competent counsel, whose duty it shall be to proceed to any section of the commonwealth that the committee directs, and there bring to trial any offender against whom sufficient evidence can be secured to give promise of a successful prosecution. The committee is to operate under authority of the Society, and the evidence submitted by practitioners in good standing will be collected by it prior to submission to the counsel, and if there is a fair prospect of a successful issue he will be instructed to proceed to the locality and perfect the case for trial.

This will, of course, require a considerable sum of money, but to the large number of practitioners in the State it will be merely nominal, and it is expected that a few vigorous prosecutions will put an end to the offences. The Society's share of the fines will go a long way toward reimbursing it, and in the end the expense will be very light.

At first it was suggested that each member should be assessed a sum sufficient to establish the requisite amount; but it was shown that this arrangement would be unfair to the members and discourteous to the practitioners of the State who are not associated with the Society; and as the effort being made is for the benefit of all, every licensed man should have an opportunity to make a voluntary contribution. Some veterinarians are in position to be more liberal than others, and they should have the opportunity to subscribe as much as they are pleased to give, while those who are less fortunate should not be debarred from the privilege of contributing what they can conveniently spare. There are about eight hundred (800) registered veterinarians in the State; but it is more than probable that not more than six hundred (600) are in active practice, and who would be directly benefitted by the efforts of the committee. If each one would subscribe the small sum of five dollars (\$5.00) it would make a splendid fund of three thousand (\$3000) dollars, which would be all-sufficient to do the work in

a prompt and complete manner. But it can hardly be hoped that all will respond to the committee's appeal, and so it would be well for those who can do so to increase the amount of their offerings to ten (\$10) dollars, which will offset some of those who fail to send in, as well as to replace the deficiency in cases where a smaller amount than the sum first mentioned is pledged. Everyone, therefore, is thus enabled to give according to his ability. The REVIEW feels that the undertaking can and will be a perfect success, and will start the fund by a subscription of twenty-five (\$25) dollars, which the committee can have upon notification.

A SAD EMPHASIS of the precautions which veterinarians should exercise in the many surgical operations which daily practice imposes is given elsewhere in this number by the death of young Dr. Petty, of North Carolina, who was performing a tenotomy for the cure of stringhalt, when he was violently thrown upon the ground and fatally injured.

IN answer to a Western correspondent, we beg to say that the editors of the REVIEW reserve the right to reject an article sent to it for publication when in their judgment it lacks the merit of originality or other value than being a true copy of someone else's writings. When an alleged "author" seeks to gain publicity by indulging in flagrant and brazen plagiarism, the waste-basket is the proper course for the manuscript to take, unless return postage accompanies it.

THE editor of the REVIEW, in writing to a valued collaborator, thanking him for a splendid illustrated original article (which will begin in the December number) said: "We can insure you the largest number of veterinary readers ever held by a veterinary publication in this country." We add in reference to the character of the journal referred to, the words of a Western reader: "I have read the REVIEW since Volume X, and all other journals published in this country, together with several

foreign ones, and I unhesitatingly, assert that for filling the veterinary field in all its phases (from the heaviest scientific articles to the news of the profession), the REVIEW accomplishes the object with credit to herself and the profession which she so well represents." We simply reiterate that the REVIEW is just what the profession makes it ; all the credit is theirs, and we believe that they are producing a very creditable magazine.

"IN medicine, we make more mistakes by not looking than by not knowing."—(*Sir William Gull.*)

THE ONTARIO VETERINARY COLLEGE opened its session on Oct. 15, with a lecture by Principal Smith. A large class of students were present from all parts of North America, and some from Great Britain.

MOLASSES AS A FOOD FOR HORSES is being tested in many stables in New York and Brooklyn, largely through the prominence given to the subject by the excellent paper read before the meeting of the New York State Society by Dr. George H. Berns, which was published in the October REVIEW. We know of a single instance where a young coach horse, purchased a year ago, and which remained thin and spiritless ever since, despite various efforts to induce an improved condition, when placed upon molassed food, gained flesh and improved in driving qualities so rapidly as to cause the greatest wonderment among those who were cognizant of the experiment.

"DIPPING SHEEP FOR PROFIT."—We are in receipt of a letter from the Zenner Disinfectant Company, 24 Bates St., Detroit, Mich., in which they say they still have a few copies of "Dipping Sheep for Profit," which they will be pleased to send, free of charge, to the readers of the AMERICAN VETERINARY REVIEW. This is a very interesting little volume, containing articles from Prof. Plumb, of Ohio Experiment Station ; Prof. Muinford, of Illinois Experiment Station ; Prof. Shaw, of Montana Experiment Station ; Prof. Hickman, of Ohio Experiment Station, and also from John A. Craig, of Iowa ; Geo. Allen, of Illinois ; G. Howard Davidson, of New York; Richard Gibson, of Ontario ; Geo. Harding, of Waukesha, Wis. It also contains a treatise on scab upon sheep, which is considered a very accurate diagnosis and method of treatment for scab.

ORIGINAL ARTICLES.

CONTRIBUTION TO THE STUDY OF CANINE PIRO-
PLASMOSE.

BY MM. NOCARD, OF ALFORT, AND MOTAS, OF BUCHAREST.

TRANSLATED BY A. LIAUTARD, M. D., V. M.

(Continued from page 594.)

PATHOLOGICAL ANATOMY.

The lesions are so much more accused that the disease has lasted longer. The cadaver is often icteric; the more or less severe yellow tint may be even of a chromic color.

The *spleen* is often hypertrophied three or four times its normal size, and lays along the hypochondriac region as far as the sternum. Its darker color reddens to the contact of the air; its consistency is diminished, but not to that of softening; in the rapid forms those conditions are wanting; but in return, preparations obtained by "frottis" (that is, by passing the material once gently over the slide) are very rich in haematozoæ.

The *liver*, engorged with blood, is little changed in appearance; sometimes it has the aspect of a cardiac liver; the blood which escapes, or a section, is always much loaded with parasitic corpuscles. The biliary bladder, ordinarily distended, contains thick, syrupous or granular bile, dark green in color.

The *digestive mucous membrane* is rarely infiltrated and congested towards the duodenum.

The *kidneys* are ordinarily extremely congested; the capsule, easily removed, leaves exposed a great number of petechial spots of various sizes. On section, the cortical portion seems gorged with blood and covered with fine haemorrhagic puncta. The blood which escapes from it is extremely rich in parasites.

Often the *lungs* contain small apoplectic centres; in very young animals, which die rapidly, it is almost the rule to observe acute cedema of the lung with abundant slightly reddish spumosities in the bronchii and the trachea.

The *pericardium* contains little bloody or citrine serosity ; it is not rare to find numerous petechial spots towards the point of the heart or under the endocardium of the left heart.

The *lymphatic glands* are rarely altered.

The *medulla of bones* is almost always the seat of severe congestion, which makes it look like that of foetal bone ; it is soft, friable and contains a great number of parasitic corpuscles.

The *nervous centres* present nothing appreciable except a little congestion of the meninges.

All the changes of the blood which we have mentioned are found in all post-mortems : the heart and the large blood-vessels contain clots, of little consistency, formed entirely of fibrine floating in reddish serum heavily loaded with haemoglobin.

The histological study of the organs shows that all those lesions proceed from the extreme distension of the capillary network through masses of corpuscles, most of which are gorged with parasites.

DIAGNOSIS.

Alone the constatation of the intra-globular parasite justifies the diagnosis of piroplasmose.

When one is in the presence of a dog, anaemic, with haemoglobinuria or ictere, which is or has been covered with ticks, the suspicion of the presence of the disease is justified ; the microscopic examination of the blood must be proceeded with, following the method we have indicated.

If a first examination is negative, it must be repeated two or three days in succession, as the parasites are often in small number in the chronic form.

VIRULENT PRODUCTS — MODES OF INOCULATION — INCUBATION—RESISTANCE OF THE VIRUS.

The parasite exists in the blood ; all the vascular tissues can give the disease. We have principally used the blood in our researches ; subcutaneous, intramuscular or intravenous inoculation transmits the disease with either form, as long as

the blood used contains parasites ; injection in veins is the most rapid and surest way.

The richer in parasites the blood is, the younger the inoculated dog, the more severe also shall be the disease produced, and the quicker its development.

In all young dogs, a drop of rich blood is sufficient to give a fatal attack ; 1 c.c. is necessary to render adult animals sick.

In the slow form of the disease, the blood is much less virulent than in the acute, leaving aside the quantity of parasites it may contain ; even when inoculated in large doses, it ordinarily gives only a mild affection. In one of our series of experiments, the initial virus was taken from a dog in convalescence, whose blood still contained parasites ; all the dogs of that series had the mild form of the disease ; none died.

Whatever may be the quantity of inoculated blood, or its richness in parasites, and the mode of inoculation, always a certain time must elapse before the apparition of the first symptoms ; if systematically, the blood of the general circulation is examined, parasitic corpuscles will scarcely be found before 36 hours ; generally it is after two full days that the parasites appear, even with intravenous injection. If the inoculation has been made in the muscles or under the skin, the inoculation is between five and six days. In acute cases, death occurs in the average, three days after the apparition of the parasites ; very young dogs die still quicker, 36 to 40 hours after. If, then, inoculation has been made into the veins, the animal dies, generally, the fourth or fifth day ; if it has been inoculated under the skin, it may survive nine, ten or eleven days.

When the disease assumes the slow form, its duration varies very much ; the animal may remain sick 30, 40 and even 60 days.

The blood, collected pure, preserved in a cool place (cellar) and in the dark is still virulent after 25 days in winter ; we have found it inactive after 14 days in summer.

The blood loses its virulence when heated at 50° for one-half an hour, at 45° during one hour, at 44° during one hour

and one-quarter ; it is yet virulent after being heated at 43° for one hour and one-half.

ETIOLOGY.

Nothing has more solid foundation than the part played by ticks in the development of bovine piroplasmoses. The handsome experimental researches of Smith and Kilborne, confirmed by those of Pound, Koch and Lignières, have proved that to transmit Texas fever, tick fever, red water, or tristeza, it is sufficient to deposit on the surface of the body of adult bovines, coming from uninfected countries, larvæ born of ticks (*Rhipicephalus annulatus*) having lived on diseased bovines. Since, wherever the same disease has been observed (and its geographical area is immense), a close relation from cause to effect has been established between the apparition of haemoglobinuria and the presence of ticks on the skin of the sick animals.

The great analogy which exists between the symptoms of piroplasmoses, whether in dogs or cattle, and specially the almost identity of the hæmatozoa in the two species, suggested the thought of an etiology of similar nature.

In all the observations made at Alfort, the sick dogs had been recently covered with ticks ; some had them on still. All those that we have had belong to the species *Dermacentor reticulatus*.

It is probable that this specie is the ordinary agent of transmission of the disease, at least in France.* We cannot be positive, as we have not succeeded in infecting dogs by covering them with larvæ obtained from female ticks taken from our patients.†

* The piroplasmose of the South African dog seems due to a different ixode that l'prof. Neuman has recognized as the *Hemaphysalis leachi*.

† The paper of Lounsbury explained our failures : while the larvæ of the *Rhipicephalus annulatus* may complete its evolution on the same bovine, those of the *Hemaphysalis leachi* leave the dog on which they lived, at each brood ; the hatching is completed on the ground or the bedding, the nymph and the adult tick must find a new host to prepare themselves for a new brooding or hatching ; besides, it seems that neither larvæ or nymphs have the power to transmit the disease ; adult ticks alone are pathogenous.

It is probable that the *Dermacentor reticulatus* acts as the *Hemaphysalis* ; as after see-

In almost all the cases that are known, they were in hunting dogs which had recently hunted in woods or brushes or had been kept in kennels infected with ticks.

Contrary to what is observed with the bovine piroplasmose, the very young dogs (from two to twelve weeks) are much more easily infected than adults, and with them the disease assumes a very acute form, always fatal.

Specificity of the Parasite.—Morphologically, the hæmatozoa of dogs is identical to that of bovines. However, it can develop only in the canine organism. We have found it impossible to give the disease or even show the existence of the parasite in the corpuscles of an animal of another species, no matter what mode of inoculation we used (subcutaneous, intramuscular or intravenous), what quantity of blood we inoculated, nor its richness in parasites : bovine, horse, sheep, goat, cat, rabbit, guinea pig, white rat, white mice, and pigeon remained entirely refractory.

CULTURES OF THE PARASITE.

All our attempts at artificial culture of the hæmatozoa of the dog have remained fruitless.

Defibrinated dog's blood, serum very loaded with haemoglobin, blood made uncoagulable by the injection of leech extract in the blood-vessels of a fresh dog, have given no better results than the ordinary media.

If defibrinated blood very rich in parasites is placed in a hot chamber at 37° , sometimes an intense phagocytose of the infected corpuscles is observed ; the parasites are also seen undergoing deep changes ; they are never seen multiplying. Whatever may their initial form be, they rapidly become globular, rounded ; their nucleus becomes central ; then, by a kind of condensation or contraction of the protoplasm, they diminish in size until they seem to be reduced to the nucleus only.

The same changes occur also in the blood kept to the temperature the larvæ deposited on the skin of our dogs of experiment get bigger little by little, we would see them disappear all at once before having passed to the state of nymph and be lost on the ground or in the bedding.

perature of the room ; but they take place more slowly, and it is possible to follow exactly their steps. Already, after five or six days, the parasites are considerably reduced in size and seem to be reduced to the nucleus, surrounded with a thin layer of protoplasm, scarcely colored in very pale blue, while the nucleus is of a strong carmin red.

After a few weeks, the haematics are much altered ; they seem to have lost the greatest part of their haemoglobin ; they take very badly coloring matters and seem to be glued together to form an homogenous sheet, uniformly tinted in very pale orange color, in which the parasites, strong red colored and reduced to their nucleus, which is surrounded with a very thin layer of scarcely visible protoplasm, are disseminated in great numbers and may give the illusion of a culture.

We have made leeches suck the blood of sick dogs, blood very rich in parasites ; the leeches, kept in the hot chamber at 22° in water changed every day, have allowed us to examine day by day the changes which occur in the blood collected in this manner ; nothing of what we have described before could be observed ; already, after fifteen hours, the parasites, still large, have taken a globular form ; but they seem to have lost their amoeboid motion ; the red corpuscles are pale and have a tendency to agglutinate together ; the following days, the parasites are seen diminishing in size gradually ; after a week, they seem reduced to their nucleus and are disseminated in a kind of informal stroma, resulting from the agglutination and mixture of the red corpuscles ; their number has not increased ; these alterations remain identical until the death of the leech, which occurs from the fifteenth to the twentieth day.

Then, it seems well that the haematozoa cannot multiply but in a living and appropriated media.

CONSECUTIVE IMMUNITY AFTER RECOVERY.

All dogs recovered of the natural or experimental disease are hereafter refractory ; they support with impunity the injection of virulent blood in doses far superior to those that are always fatal for the witnesses.

Dog No. 1, recovered of the experimental disease. After two and one-half months, when the red corpuscles have returned to 5,740,000 in number, he receives under the skin 20 c.c. of a blood of which 3 c.c. kill a dog witness in 7 days. Examination of the blood made every day, during 25 days has never shown haematozoa ; the thermic curve has had no elevation.

Dog No. 5, reinoculated three months after recovery with intravenous injection with 12 c.c. of virulent blood. Once only, the fifteenth day after, very rare parasites were found in the blood ; the dog has never shown signs of sickness ; temperature has remained normal.

Dog No. 8 (small size), reinoculated six months after recovery, with subcutaneous injection of 5 c.c. of blood very rich in parasites ; its temperature, on the eighth day, went up to 39°, but no haematozoa were ever found. The same dog has received since, several times, 72 c.c. of virulent blood, without having ever exhibited any parasite.

Dog No. 12, received two months and one-half after recovery 10 c.c. of virulent blood in a vein, and 5 c.c. under the skin ; its temperature remained normal ; very rare parasites were found in its blood the second, third and fifth day after the inoculation ; nothing after.

Dog No. 80, cured of a very acute attack of the disease ; received two months after 15 c.c. of blood very rich in parasites in the jugular, and 5 c.c. under the skin ; he never had fever nor parasites.

In all these cases the dog witnesses inoculated at the same time and of the same manner, with much lower doses of the same virus, died in 7-9 days or in 3-5, according to the mode of inoculation.

One can observe that immunity obtained by a first attack followed with recovery is altogether solid and lasting. After six months' recovery dog No. 8 is still refractory.

What is the mechanism of this immunity ?

We have already said that in the blood of the sick, specially of those that are going towards recovery, an active phagocytosis

was going on. It is common to observe large mononuclears having absorbed two, three, four and even up to six red corpuscles, all infected ; among these corpuscles, some have already lost their haemoglobin ; others take color nearly as well as normal corpuscles ; between these two extremes, one may find intermediate stages ; the former have their parasites round, very small, scarcely colored and having an ill-defined outline ; in the others, the parasites, also small and round, are strongly colored and their outlines are neatly marked.

This phagocytose goes on also in the depth of organs ; it is observed very brisk on sections of spleen, even in dogs which have died with the acute form of the disease. In each field one may see mononuclears gorged with parasitic corpuscles partly digested ; at times the phagocytosed corpuscles are so numerous that the phagocytes give the illusion of a capillary vessel cut across.

Infected haemastics are always absorbed by the mononuclears : we have never seen a single corpuscle phagocyted by a polynuclear ; it is, however, probable that polynuclears coöperate also to the work of absorbing the parasites free in the plasma ; but we have not seen this in a positive manner.

(To be continued.)

IN canine distemper, *Echafolta* in four minim doses administered in a drachm of water about every 2 hours in the acute stages has given the writer most excellent results.—(E. L. Quimby, M. D. C., Chicago, Ill.)

JERSEY JUSTICE.—Judge Garretson, in his recent charge to the Somerset (N. J.) Grand Jury, ruled that where death is caused by horses frightened by a recklessly driven automobile the offending chauffeur may be indicted for manslaughter. Joining this with Judge Dixon's earlier charge to the Bergen County (N. J.) Grand Jury on similar lines, we have two important judicial opinions agreeing in fixing an adequate penalty for death due to fast automobiling. What was heretofore an "accident," punishable with a fine which, to a man wealthy enough to own an automobile, was trifling, is thus made a crime to be punished with imprisonment.—(W. H. L.)

THE GREAT FIELD OF COMPARATIVE MEDICINE.

BY PROF. JAMES LAW, F. R. C. V. S., ITHACA, N. Y.

A Presidential Address delivered before the 12th Annual Meeting of the New York State Veterinary Medical Society, Sept. 9th, 1902, at Brooklyn, N. Y.

It is not always best to plume ourselves upon our achievements and the exalted position to which we have attained. It is liable to beget personal and professional pride, which is proverbially near to personal disaster. Yet, if we are duly impressed with the fact that we know so little, even to-day, and with the immeasurably vast field that still lies open to us for discovery and advancement, it is not unbecoming, and it may be a wholesome tonic and source of encouragement to take a cursory glance over our field of work, and note some of the changes that have taken place within the memory of living man.

But no one can confine such a glance to one field of achievement alone. The eye is at once caught and held by the wonders of modern progress on every side, which have kept pace with each other in every field of human enterprise. The wonders of achievement of the past half century in every field of science, have immeasurably surpassed those of any antecedent period of the world's history of many times its duration. If an accomplished man of the early part of the 19th century could return to mortal life, furnished as he was at his exit, he would be made to feel at every step that the world was out of harmony with his habit of thought and experience. The triumphs of steam and electricity in bringing the most distant parts of the world to his door; the revelations of the telescope and spectroscope in demonstrating the existence and composition of the greater part of the now visible stellar universe, and in creating entirely new cosmic doctrines; the regular succession of geologic strata and their relics of living forms furnishing a historic library of the earth's past history, and a demonstration of the successive stages of its building; the demonstration of light and heat and electricity as forms of energy which

may be made mutually interchangeable, and through which all the energies of the universe appear to be continually maintained ; the exhibition of the Röntgen light rays penetrating the most opaque organic matter, and showing the existence, position and form of the inorganic substance, imbedded in its deepest recesses ; the responsiveness of given chemical compounds to light, through which we obtain the now commonplace but perfect photographic pictures of solid objects ; the power of charging given bodies with light or electric energy, to be given off by slow degrees for useful ends ; the still more wonderful power of certain products—radium polonium—of radiating light indefinitely without the preliminary charging of them from a previously radiant source ; the transmission of electric messages, without solid conductor, through the ether for hundreds of miles, to be caught up and turned into words and thought by a receiver rightly attuned to their vibrations ; the submarine ship ; the dirigible flying machine ; these are but a few of the more obvious advances that crowd in upon the average mind that is in no sense specialized in any one of these fields. To the scientist of 1800 these, and the thousand other less obtrusive, but not less real, of the 19th century triumphs, would come with a force that would be perfectly overwhelming.

When we turn to the advances in matters connected with medicine, the wealth of example is to us even more embarrassing. I can note but a very few of the salient points in which the present differs from the past.

When I took to the study of medicine the old days of venesection had not quite passed ; every physician carried and used his lancet, and no veterinarian could get along without his fleam and blood stick. Every active inflammation, if met in its early stages, was held by many to be benefited by the free abstraction of blood. In Southern Europe, the practice was even more firmly rooted ; under the then prevailing doctrines of Bronssais, bleeding was advocated *coup sur coup* time and again in the same attack, any increase of pulse, breathing and mouth temperature being a warrant for a new abstraction.

Bronssais himself is reputed to have bled the babe at the breast and the old man of seventy. A number of years later, the celebrated Italian statesman, Cavone, was held to be literally bled to a hopeless and fatal condition. By my time, however, the old and celebrated British physicians had become rather ashamed of their former excesses in this line, and the doctrine was already current that the type of disease had changed from a sthenic to an asthenic one, and that the former free depletions were not only not called for, but were in most cases absolutely injurious. Why the type should have changed in Great Britain and not in France and Italy was not fully explained. Some of the incorrigibles and disloyal ones had a rankling suspicion that the violence of the disease in former years was in no small degree due to the energy of the treatment applied. In any case, the bent spring rebounded, and it flew so violently to the other side, that the practitioner could hardly be made to confess that he knew of the existence, much less the use, of the instruments of venesection.

To-day we are somewhat less prejudiced on either side. We recognize that no agency is more prompt and telling in its action than a diminution in the solids of the blood ; for the water is soon supplied anew, and we have secured a transient abatement of suddenly induced plethora, a strong impression on the nervous system, and indirectly on circulation, nutrition, calorification, and the many recondite processes of cell production, and destruction of metabolism, of hemolysis, of leucocytosis, diapedesis, of phagocytosis, and of chimiotaxis, positive or negative.

If our theories are more complex, they are to-day based on a wider knowledge, and if we can no longer use the lancet as a panacea for all inflammatory, and many other diseases, we have intelligent views as to the small number of cases in which we can still draw on its use with striking advantage.

In the middle of the last century sedative treatment was the rule ; calomel and opium held a high place in the treatment of inflammatory affections, and the reliance upon it was so strong

that it was naturally pushed to excess, and cases of mercurial salivation were frequently in evidence. To-day we still esteem calomel as a valuable antiseptic of the alimentary tract, favoring at the same time elimination from the whole chylo-poietic system, to say nothing of its influence on metabolism and nutrition, but we are no longer in danger of using it as a routine treatment, or of pushing its use to the extent of producing mercurialism.

A still more potent sedative was found in tartar emetic, which in combination with febrifuge diuretics was used as a routine treatment in febrile and inflammatory cases, for both man and beast. Here again we had an agent of great potency, especially in the carnivora and omnivora, which acted not only on the nervous system and indirectly on the skin and mucous membranes, quieting, relaxing, stimulating perspiration, but with an influence on the great liver and digestive functions. No doubt it oftentimes assisted wonderfully in abating the high nervous tension and inviting that resumption of secretions which was attended by a favorable crisis or lyssis. But, the blind reliance upon it as a routine treatment is gone, and when we now prescribe it, it is only to secure some definite result of its physiological action, and that accomplished, it is dropped from the prescription.

We might canvas other agents in the same way, but time presses and I must let these stand as examples of a change at once radical and rational.

One great danger of to-day is that we should overlook the real worth of medicinal agents and methods that were the standards of the great men of the past, and in so doing put from us much of the legacy they have left us. In my view of the matter wisdom lies in a certain respect for their methods, which had after all a substantial basis, so that while entirely loyal to the advances of recent time, we should still stand ready to judiciously pass on the medical lore of the past and make a right use of it in those cases in which it can be applied to advantage.

The ordinary diseases of bones in animals were formerly looked upon mainly as the result of mechanical injuries, and ringbones, splints, and spavins were explained on the grounds of blows, concussions, sprains, and the like. To-day we look deeper, recognizing the bearing of heredity; varying individual and family nutrition; the quality and tone that comes from appropriate diet and usage, and the lack of these with unsuitable food and disuse; the influence of the poison that is found in the magnesium limestone and of the impaired nutrition which comes in constitutional diseases. In short, to us an ostitis or periostitis is not simply a local inflammation to be subdued, but also, in many cases, a constitutional infirmity, which must be corrected if we would make a permanent cure.

But in the whole field of medicine no advance has been so fundamental and fruitful as the introduction of microbian pathology. As a link with the past, you have before you one who sat under the instruction of a man who even denied the existence of infection in epizoötic diseases. William Dick, the founder of the Edinburgh Veterinary College, was in some respects a great man, according to his light. But in some lines his light was but gross darkness. Following Sydenham, he attributed all epizoötic diseases to general causes, thermic, atmospheric, electrical, telluric, which assailed all animals alike, and to which those only succumbed which were at the time attuned to the morbid influence. For him rabies was the mere result of a general influence, and in his lectures he related how a rabid dog had licked a sore on his hand without producing the slightest evil result. For him, lung plague was the result of inclement weather, exposure, poorly ventilated buildings and the like, while rinderpest took its start from impaction of the third stomach, as a consequence of feeding on dry, fibrous, weathered and innutritious food. Dick stood long and loyally by his colors, logically applying his doctrines to all epizoötic diseases; he bore up bravely through the invasion of aphthous fever and lung plague, and it was only when the deadly rinderpest swept over the island that the old man, full of years and honors, had

the chagrin to see his whole doctrine fall to pieces under the dread logic of facts.

The doctrine in question found in Dick at that time its most faithful exponent under all circumstances, and as applied to all epizoötics, but others clung tenaciously to general causes in the case of a number of communicable affections. Henri Bouley, of Alfort, a grand man, physically and mentally, a man who never touched a subject but to render it attractive, may be adduced as a striking example. Glanders was at that time recognized in England as contagious in all its forms and stages, even the indomitable Dick excluding it from his list of epizoötic diseases due to general conditions. But in France contagion was accorded to acute glanders only, the chronic cases being held to be entirely free from infectious qualities. On both sides of the Channel the disease was attributed to general mismanagement, and poor hygiene, as was tuberculosis at the same date. I have heard the silver-tongued Bouley discourse learnedly, and to himself conclusively, on the development of glanders from the impurities of stable air, insufficient or injurious food, cold, damp, and, above all, from over work, the creatin, creatinine and other morbid products retained in excess within the system, laying the foundation of the deadly morbid processes. The results of the two doctrines were not a little remarkable.

In Great Britain it was rather rare to see a glandered horse, while in the Veterinary School at Alfort they were daily on exhibition. In the English army glanders was virtually unknown, and the occurrence of a single case was held to reflect seriously on the regimental veterinarian, while in the French army, 9 per cent. per annum became victims of this disease.

But even when contagion was recognized, the mystery continued, as to the actual agent by which the transmission took place. This ignorance was cloaked under such vague and speculative terms as "miasen," "humor," "virus," and later, "morbid functions in cells," and pathogenic "bioplasen."

It was only when Pasteur in his researches on alcoholic fermentations demonstrated the facts that such fermentations and

even putrefactions were the direct consequence of the multiplication in the liquids of particular living organisms or ferments, that the foundation had been laid for a true doctrine of contagion.

Lister, at that time assistant surgeon to the Edinburgh Surgical Hospital (and whose lectures I then availed myself of) conceived the idea that the fermentative and putrefactive changes in wounds, and notably the terrible hospital gangrene, must be due to similar ferments, and therefore preventable. He pursued his research for seven years, and in 1867 was enabled to report the demonstration of the truth of his convictions. It was years, however, before it made headway in other lands. Guerin, for example, taking the lead in Paris in 1871, but very soon the scourge of the hospital came to be held as a thing of the past, and patients went to the operating table with a hopefulness and confidence that had never before been known.

Prior to Lister's researches, compound fractures and gunshot wounds were most dangerous contingencies, and most operations involving the opening of the abdomen, the cranium or the chest were considered very redoubtable, whereas to-day they are undertaken light-heartedly and in a most hopeful spirit. And yet long before Lister's day the castration of females had been generally practiced in different countries, often by others than veterinarians (by gelders and shepherds) with almost invariable success, and the trephining of the cranium for cœnurus was a common and often a successful practice with veterinarians. The danger lay more in the concentration of the infection in great hospitals than in the dangerous nature of the lesion by itself. The virtual disappearance of hospital gangrene and other wound infections from army and city hospitals is one of the most splendid monuments that could be raised to the memory of a man. No matter if we have largely discarded Lister's antiseptic surgery, substituting wherever possible aseptic treatment, the same principle underlies both, and it is to Lister that we must attribute the planting of the germ that has borne such a splendid fruition.

As Lister first applied the great discovery of Pasteur to surgery, so Davaine may be said to have done for medicine, and it is an important fact that it was in the line of medicine of animals. Pollender in 1849 had found multitudes of very fine rods in the blood of anthrax-stricken cattle. Davaine confirmed this a year later, and Brauel seven years later still. But it was only in 1863 and as a result of the Pasteur discovery that it suddenly occurred to Davaine that this was the true cause of the disease. But anthrax was still a very indefinite quantity. By a reference to the literature of the time, it will be seen that it included black quarter, malignant oedema, hog cholera, swine plague, swine erysipelas, the various haemorrhagic septicæmias, and even Texas fever. It was only slowly and by patient work in the field and laboratory that these various independent affections were differentiated and each assigned its place according to its true microbial cause and pathology. The final demonstration has come in every case through the discovery of the microbe, and gradually veterinary pathology has been enriched by the addition of a long list of animal diseases, all having much in common and all due to different microbial causes. The laboratory study of these affections has not only given us the demonstrations of this large class of maladies, but it has contributed largely to the identifying of many deadly forms of poisoning, by toxins, ptomaines, and enzymes, and again by mineral agents like powdered soaps added to swill, and which have often proved as deadly to the herds poisoned in this way as the most destructive forms of haemorrhagic septicæmias or genuine swine fevers. The localization of such outbreaks, their confinement strictly to certain filthy enclosures, to herds fed in a particular way, and the absence of the specific germ of the disease which is suspected to exist, will usually furnish the crucial test, and differentiate for scientific and for practical sanitary purposes, affections, which in time past would have been classed together as one common malady. So far as these maladies are concerned we can to-day place veterinary sanitary science on a sound basis, always provided that its administrators

are selected for their knowledge of modern animal pathology, and are not mere office-holders appointed in recognition of personal claims of other kinds.

Closely connected with these affections, are rinderpest, sheep pox and lung plague, which, since the extinction of the latter in this republic, we have come to think of as plagues of the Old World, which can never more directly interest the favored stock-owners of America. But our acquisition of the Philippines has brought us into direct contact with Asia, the ancestral home of animal plagues, and the war in those islands has apparently been the immediate cause of the wide and deadly extension of the plague of the Steppes into the herds of the Philippines. Fortunately for our home herds, our vigilant Bureau of Animal Industry was quick to see and meet the danger, in securing an order of exclusion of all cattle and pigs coming from the Philippines, from the United States and any of its dependencies.

But as veterinarians of the imperial country, we can no longer afford to ignore the rinderpest of the Old World. It is now domiciled on land which in the progress of events has come to be a part of our nation, and we are called upon in right and justice to assist the islanders in ridding themselves of a scourge, of which our interference was in a large measure the occasion. Manila must look to America for the means of extinction of this plague which now threatens the ruin of her cattle industry, and the American veterinarian must stand ready to take up the work intelligently and to carry it through to a successful issue. No cattle plague is more redoubtable and deadly, and yet, for those who may be charged with its extinction, the prospect is much more hopeful than when we are dealing with a pestilence which is slower in its progress, more liable to prove occult in its course, and in dealing with which every step is liable to be clogged and even blocked by a badly informed and often prejudiced legislative body. In a dependency like the Philippines, under an intelligent centralized authority, there is a better prospect of the adoption of effective

measures of extinction, and of carrying these through without wavering or hesitation to a splendid success. If this can be accomplished, and if the object lesson can be taken in the right spirit by the United States, encouraging them to grapple effectively with their own indigenous plagues, the blood and treasure expended on these distant islands may be repaid many times over in the future prosperity of our animal industry.

Let us now glance for a moment at tetanus. Until comparatively recently no one scarcely suspected that tetanus was an infectious disease. It was believed to be the result of local irritation and nervous excitement, and there is yet a widespread idea that any violent pain is likely to bring on the affection. This received countenance from the frequency with which it followed deep wounds of the palms and soles in man, the feet, tail and testicles in the horse, from lesions of unyielding fibrous tissues, and from gunshot and bayonet injuries. The fact was overlooked that the affection often started during or after cicatrization, when the real irritation had in a great measure passed. Since the discovery of the bacillus of Nicolaier, we know that this anaerobic germ flourishes in deep, closed wounds only, under the skin, fascia or tendon, therefore in stab and bullet traumas par excellence, in which there is abundant exudate outside all circulation of blood or oxygen, and that it will not invade the circulating blood in which oxygen is relatively abundant. We are no longer in the dark, left to meet it blindly by antispasmodics alone, but we know how to prevent it by asepsis and antisepsis of wounds, by exposing deep dirty wounds to the action of the air, by dressing with antiseptics the navel of the new born, and by ridding the subject of intestinal worms which make infection easy for the bacillus.

Formerly a large number of young animals died of purulent arthritis and diarrhoeal diseases very shortly after birth, the affections being attributed to weakness of constitution and faulty feeding. To-day we place the finger on the source of trouble in the infective omphalitis from which the septic microbes find their way in the blood to produce inflammatory changes, ne-

crossing degenerations and secondary abscesses, in the liver, lungs, joints and alimentary canal.

Our herds of horses and cattle alike and our flocks suffered largely from abortions, which were attributed to constitutional infirmities, faulty feeding, mechanical injuries, and emotional disorders. Now we know that different infectious microbes living in the genital passages are largely the cause of the trouble and that the malady is just as amenable to treatment and prevention by sanitary precautionary measures as are any of the diseases that have been long recognized as due to contagion.

Many of us can recall when actinomycosis was known as cancer, clyers, spina ventosa, or osteo-sarcoma : terms that served to cloak our ignorance of its real cause and pathology. To-day we know that it is simply a culture in the living tissues of the beautiful ray fungus of actinomycosis ; we can trace its secondary causes in the sowing of its seed in wounds and natural openings and recesses, and cannot only ward off its approaches, but in all moderate cases we can subject it to effective treatment, medical and it may be surgical as well.

Dourine has been known in Europe since 1796 and in 1882 was introduced into Illinois in the body of a French horse. Until very recently, however, it was very much misunderstood. Bouley, Trasbot and others accepted the fiction that it is syphilis communicated from man to horse, and propagated thereafter as an equine disease. Others considered it as glanders affecting the genital and nervous systems. To-day we recognize its cause in the *trypanosoma equiperdum*, an infusorial parasite which lives in the blood and genital passages, and can be successfully transferred to the dog.

Surra, or rot, of the hot rainy season in Hindustan and neighboring countries, like rinderpest, now threatens us through our Philippine dependencies.

This affection of solipeds, camels and elephants, was supposed to be a form of remittent or bilious fever allied to that of man, but is now traced to another *trypanosoma* (*T. Evansi*), differing from that of dourine among other things in that it is

transferred from animal to animal by blood-sucking flies and other insects.

The nagana of East Africa, due to another trypanosoma (*T. Brucei*), and which is not infectious to elephants, was only known late in the last century and was long attributed to a special poison instilled into the wound by the tsetse fly (*Glossina Morsitans*), which is now known to convey the trypanosoma.

Here we have a new class of infectious diseases introduced into our veterinary literature, one of which (dourine) has already gained a foothold in the United States, and a second (súrra) threatens us through our Eastern dependency. It may be but the turning of a new leaf, as other animals suffer habitually in certain countries from trypanosoma; a parasite of this kind (*T. Lewisi*) is common in rats in Asia and Europe; another invades the systems of the dog in South Africa and Europe, and certain inscrutable diseases of South America and elsewhere are quite suggestive of this class of parasite.

In 1888 Starcovici found pyriform organisms in the blood globules of Roumanian cattle the victims of hæmoglobinuria the following year; what appeared to be the same parasite was found by Th. Smith in the blood globules of cattle suffering from the corresponding disease in America—Texas fever. Later it was found in Australian victims, and still later in the tristeza of South America. Thus was another of the most deadly infections of animals traced to its true source. But the advance of knowledge did not end here; shrewd observers, as early as 1868, had noticed that Texas fever never occurred in the absence of the cattle tick, and in 1889 our colleague, Dr. F. L. Kilborn, was so impressed with this fact that he secured permission to put it to the test under the auspices of the Bureau of Animal Industry. His expectations were confirmed in every particular and his results were soon endorsed by observations in all parts of the world in which this disease was known to prevail. Today the bearing of the piroplasma by the tick is perhaps the most important fact in connection with the disease; it is the pivot upon which prevention revolves, and it bids fair to be the

foundation on which the final extinction of the malady will be based.

The doctrine of tick causation has born fruit in other directions. The louping ill of sheep in Northern Europe has been traced to the ticks in the pastures, and what was long a mystery to flock master and veterinarian alike has been now cleared up and a substantial basis for prevention furnished. The agency of flies and other insects in the transmission of chicken cholera, typhoid fever, anthrax and other diseases in summer has been demonstrated, and certainly has taken the place of speculation in matters essential to sanitary policy.

In the same way at every step we have learned by the agency of birds wild and tame in the transmission of infection, sometimes as being themselves the victims of the pathogenic germs, sometimes when they become mere bearers from feeding in the same troughs with the sick animals, and other times still because they are devourers of carrion, and feed upon the carcasses of the victims of a pestilence. In their turn the vermin which approach and feed in our stables, stock-yards and parks have to be taken into account as infection-bearers. Thus the field of the veterinarian has been continually widening. An acquaintance with the infinitesimally small organisms in both the animal and vegetable kingdoms, and as far as possible (with their life history, became a *sine qua non* of modern practice.

In this microbial pathology is involved the whole subject of immunization and serum therapy. Into this fascinating subject I cannot enter here, further than to say that immunization is mainly based on our power of investing the leucocytes and tissue nuclei with the habit of producing defensive products, which are inimical to the invading microbes, or chemically neutralize their toxins, while serum therapy utilizes the same antitoxins ready formed and which introduced into the system in full doses will operate at once, without waiting for the work of the leucocytes in forming these defensive serums. In their action the two differ essentially in this respect, that when the leucocytes have, by contact with a non-fatal dose or doses of the

toxic matters of the microbes, been habituated to the production of the requisite amount of antitoxins, the habit remains, and for a length of time the animal is immune from the effect of any ordinary dose of the microbe. When on the other hand the antitoxins alone are introduced into the system, the microbes, and their toxins are neutralized, and the animal protected from the commencing or pending attack, but the leucocytes are not stimulated to produce their own antitoxins, and the moment the defensive injection has been used up, any toxins that may be present can resume their sway.

The adaptability of these systems varies greatly in the case of different microbes and subjects. In one disease the new direction given to work of the leucocytes has an effect as lasting as life: in another, a second attack may follow in a very short time. The first is a fit subject of immunization: the second is not. Again, in one disease the microbe can be robbed of its vitality or virulence by different agencies, which do not destroy the toxins: in another the toxins are more readily destroyed than the microbe, so that the training of the leucocytes to the defensive habit becomes impossible by the same method. The principle is largely the same for all, but the *modus operandi* must vary with the disease and its product. There is no royal road to immunization nor to serum therapy, but working from the same fundamental principles the technic must be worked out independently for each malady. Yet taken as a whole it is a division of the new medicine, and one of the most fruitful branches of the microbial pathology.

But we must not confine our attention to the infinitesimal, under the delusion that here only our new pathology bears sway. We must become familiar with the animal kingdom, in order to achieve an intelligent management and control of infections that are transmitted through the instrumentality of the feral fauna.

Again, the importance of the animal kingdom has always been recognized in connection with parasitism, but in the past half century the comparatively few parasites, previously esteemed important in their pathogenesis, have been multiplied

an hundred fold, and here again a practically new field has been opened up for veterinary study. Some of these parasites are among the most redoubtable and destructive known. Need I name, for I must do no more, the actinomyces, coccidia, strongyles of the lungs and bowels in different animals, the tæniæ, the boherio cephalı, the sclerostomata, filarieæ, and other blood parasites, the œsophagastomata, the trichinæ, the lungualulæ, the aspergilli, and the acarini, of internal organs in all their species and habitats. But I must not delay on the almost endless list of parasites, even to enumerate their genera.

One disease, however, has been so far omitted that it would be almost criminal to leave out of our list. When in 1865 Villemain published the results of his experiments in the production of tuberculosis by inoculation with the virulent matter of the tubercle it was met by an all but universal opposition. A vulgar opinion in certain localities, and a silent conviction of certain veterinarians, based upon their observations in herds, almost alone coincided with the brilliant French investigator. But this came in an age when authority could no longer crush facts, and slowly but surely the facts triumphed, and a foundation was laid for what must still, after 37 years, be referred to as the *future extinction* of the most insidious and deadly plague of man and animal. Seventeen years passed ere Koch crowned the work of Villemain by the discovery of the bacillus tuberculosis, for which the world was now in a measure prepared, and now, after twenty years more, we are still debating the unity or plurality of the tubercle bacillus. Truth travels slowly, but under our modern *a posteriori* or scientific method, its final triumph cannot be doubted. Already we have learned some of the variations of the dread bacillus, its lines of easy diffusion, and those that prove difficult and uncertain. And already we see that varieties of this bacillus which have in accordance with their environment assumed habits the most diverse, can be restored to one common character even as regards pathogenesis. The stumbling blocks are being gradually removed, and we are daily approaching nearer to the time when for both man and

beast tuberculosis shall be shorn of its greatest dangers, and the tribute of one-eighth of humanity and a large proportion of our live stock to the insatiable bacillus shall be reckoned a thing of the past.

Gentlemen, I have held your attention too long. I have sought to establish the position that we meet under different auspices than confronted our predecessors. Times have changed, veterinary medicine has changed, and no less our duties have changed. I have hardly touched more than one phase of the mighty transformations of the medicine of the past half century—the new microbian pathology. I would like to add that this pathology and this change are by no means limited to the field of animal plagues, but must be dealt with in the different phases and stages of the majority of what are still to be considered as sporadic diseases. And if we could enter into the allied field of medicine, we would everywhere meet with changes, advances, and demonstrations only less than we find in pathogenic microbiology.

The change in conditions demand a change in our attitude and effort; as a profession we can only hope to retain the confidence and support of the public, by showing that we are in full relation and sympathy with the medicine of modern times.

In the past the veterinary profession of New York have had the humiliation of seeing medical men and laymen appointed to do work which rightly belonged to the veterinarian, on the alleged ground that, the latter is deficient in the education and skill necessary to fulfil the duties of the place. The profession and the public have alike suffered, and they will continue to suffer more or less, until we can confute our detractors by pointing to a body of men who are amply trained for this work, and whose fitness is guaranteed by the legal demand of a high standard for entering and practicing the profession. We have to a large extent secured such a standard, one that aims higher than that of any other State in the union. The main drawback is the illegal entry or practice in the State of those who are not up to the standard required, and who seek to secure the esteem,

the confidence and all the rights and immunities of those who have entered on practice through the legal doorway. These men are violating the law, they are doing violence to every sense of honor, and they are doing their best to degrade the veterinary profession, for by unchallenged practice in the State they are setting a standard in the mind of the stock owner by which the whole veterinary profession is of a necessity graded.

By the State law this society is set as a guardian over this matter. The society must nominate the men who shall preside over the examinations for *license to practice* in New York, and on this society is imposed the duty of authorizing the prosecution of any one who may practice without this license.

This duty presses on every veterinarian in the State. If he declines to assume it, he is unfaithful to his profession, he is contributing his influence toward excluding the profession from its rightful field of work and toward the denial of the State and its great live-stock industry of the valuable service which under the statute they have a right to expect. The modern advances in veterinary medicine demand of us new duties, and by the terms of the statute the responsibilities are laid upon our shoulders. The question comes to every member of this society, and to every legal veterinary practitioner in the State, can you be trusted to meet the responsibility laid upon you? Will you prove yourselves worthy of the highly honorable duties imposed upon you by the law of the commonwealth?

It is to be hoped that before it separates, this society will take decided steps toward the maintainance of the law in its integrity. It is to be further hoped that every member of the society and every legal practitioner in the State, will frown upon, and give his active opposition to any attempt that may be made to make any man a legal practitioner by special enactment and in defiance of the existing law and of the regents' board of veterinary examiners.

It need only be added that for the meeting now in session the programme presents a varied list of practical papers and surgical demonstrations, which should call forth the freest dis-

cussion. While we are all grateful to the gentlemen whose names are on the programme, their praiseworthy efforts will be largely lost if they fail to draw out the combined wisdom and experience of the hearers as well.

IN France \$3,474,000 is spent every year in the improvement of horse breeding.

ALTHOUGH the ancients protected the feet of their horses with some covering—usually straw—horseshoes of the kind now known were not in general use until the ninth century.

THE FALL DRIVING SEASON.—Never has there been such an array of harness horses of value, ability, fine conformation and general desirability as is in New York to-day. Even Cleveland, that famed centre of amateur driving, where it is the exception not to possess a trotting horse almost the equal of the best developed racers, cannot produce more animals of reputation than our local "light harness brigade." What matters it to the driver, whether the wind blows strong or the air be keen with the first touch of the autumn frost, if he holds in his hand the reins that bring him in touch with a sensitive, intelligent and well bred animal, speeding briskly against the gale, and bringing a glow of health to his owner's cheeks, and a feeling of enjoyment worth half the profits of a day's grind at office desk. Ten years ago the harness horse was a comparative stranger to the streets of New York. The comparison is made on the basis of the horse ownership of to-day. The Speedway was unfinished and there was no place where a busy man might seize the opportunity for a little relaxation by driving at a brisk gait. A few clung to their roadsters, but many, who were passionately fond of driving, abandoned the sport because of the restrictions placed about it. The business of local dealers suffered. The business of the breeder suffered, and through them hundreds of minor employés, for whom there was no occupation, suffered. Now all is changed. There is greater and more substantial prosperity for the horseman than ever there has been, and the benefits are far-reaching. Saturday afternoon there was a formal opening of the fall driving season in the Speedway. Horsemen were there from every part of the city. Contests took place between animals that are well known and that have records for doing better than the humbler of their contemporaries. A dinner followed, and the hand of good fellowship was extended in all directions.—(*New York Telegram, Oct. 20.*)

NOTES ON A FEEDING EXPERIMENT TO PRODUCE LEUCOENCEPHALITIS IN A HORSE, WITH POSITIVE RESULTS.

BY TAIT BUTLER, STATE VETERINARIAN, RALEIGH, N. C.

Throughout veterinary literature, under various names, are to be found numerous references to a disease generally known in this country as "cerebro-spinal meningitis." More recently, Pearson has described outbreaks in Pennsylvania and Delaware, reported positive results from a feeding experiment and suggested what he considers a more appropriate name, "forage poisoning."

The writer thinks he has seen this disease in both Iowa and Mississippi, and from his observations and what he has been able to learn from the literature at his command has noted the constant absence of marked macroscopic post-mortem lesions in the brain and its enveloping membranes. In fact, the absence of post-mortem lesions sufficient to account for the pronounced clinical phenomena and early death seems to be the most constant and characteristic feature of the disease.

Early in 1901, while at the Kansas Agricultural College, I also saw a number of cases of that disease which Mayo described, in 1891, as, "epizoötic cerebritis," and which Buckley, of Maryland, has more recently described as "acute expizoötic leucoencephalitis." Moreover, during the latter part of 1901 those counties of North Carolina bordering on Albemarle and Pamlico Sounds were visited by a severe outbreak of this same disease, from which not less than 600 horses died. During the latter part of this outbreak, in the month of December, 1901, I had an opportunity to study the clinical history and post-mortem lesions of a large number of cases.

The disease described by Mayo and Buckley, and which I have seen in Kansas and North Carolina, differs very materially from the "cerebro-spinal meningitis" of veterinary literature and the "forage poisoning" of Pearson, in that the macroscopic

post-mortem brain lesions are constant, extensive and extremely characteristic and confined to the white matter of the cerebrum. This constant essential difference in post-mortem lesions and the less pronounced but important differences in clinical phenomena, lead me to suspect that we have, at least, two quite distinct diseases, due to different (although probably related) causative agents.

In a feeding experiment to produce a disease having no characteristic post-mortem lesions, the identity of the natural and the experimentally produced diseases must be determined chiefly by the clinical observations, but in a case where the evidence of identical extensive and characteristic macroscopic post-mortem lesions are added there can be no reasonable doubt as to the positive nature of the results.

These introductory observations are thought necessary to prevent any misunderstanding as to the identity of the disease under consideration.

During the early spring of 1901, a Mr. Avery, living near Wakefield, Kansas, lost, within ten days, four pure-bred Percheron horses from acute leucoencephalitis. All exhibited similar symptoms, and post-mortem examinations revealed the characteristic breaking down of more or less extensive areas in the white substance of one or both cerebral hemispheres. The sanitary condition of the stable and adjacent lots was good. The water supply came from a hillside far above the stable and was beyond criticism. The rough forage, while not of the best quality, was clean and sweet. The grain feed for three or four weeks immediately preceding the outbreak of the disease consisted of corn meal. The corn from which this meal was made, when examined in the crib, was found to be in very bad condition, probably ten or fifteen per cent. being rotten, mouldy and worm-eaten.

On our advice the feeding of this corn was discontinued, and although the other conditions remained the same, no further loss occurred. A quantity of the worst of this corn was picked out and shipped in sacks a distance of about forty miles to the

Agricultural College at Manhattan. A small quantity of the chaff blown out by the sheller, in which was a considerable amount of light and diseased corn, was also secured. It was all kept in a dry place until July 25th, 1901, when the corn in the ear was ground, cob and all, preparatory to feeding.

On July 16th two healthy colts were purchased for the feeding experiment. They were of the light harness class and about twenty-three months old. They were confined in a dry lot higher than the surrounding country, furnished with shelter that protected them from the sun and rain and supplied with hydrant water from the town waterworks.

From July 16th to July 25th, inclusive, they were each fed $1\frac{1}{2}$ kilos of ear corn, or corn and cob meal, twice daily.

From July 26th to August 19th inclusive, they were each fed $1\frac{3}{4}$ kilos of the suspected corn and cob meal, twice a day, and from August 3d to the 13th they received in addition, one feed a day—mixed with the corn and cob meal—of the chaff from the sheller previously referred to, in all amounting to about 30 kilos. The supply of suspected corn and cob meal having been consumed these colts were fed on August 20th and the morning of August 21st (three meals) a quantity of good marketable shelled corn.

One of the colts sickened and died at 11.40 A. M. August 21st. During the first ten days of the experiment each colt received daily about 5 kilos of alfalfa hay of the previous year's crop and for the balance of the time each had daily about 6 kilos of new bottom land prairie hay.

The writer left Kansas August 15th and the following observations were made by Mr. A. T. Kinsley, M. S., Assistant in the Veterinary Department of the Kansas Agricultural College: "The colt that died August 21st at 11.40 A. M. was apparently in his usual health at 7.15 A. M. At 8.15 A. M. having become entangled in the wire fence he was assisted to his feet, but staggered away to the right until he came in contact with the fence again. At 11.40 he died and the post-mortem was made at 1 P. M. The internal organs were carefully examined, but

no lesions found except a few 'grayish white blotches on the liver.' The left cerebral hemisphere was soft to the touch, and when cut through, the white matter was broken down extensively, nearly the entire hemisphere being involved. On section, the right cerebral hemisphere only showed a small broken down area." The time which elapsed from the beginning of the feeding of this suspected corn to the death of the animal, between three and four weeks, corresponds very closely with my observations in the natural outbreaks of the disease.

THE most curious cemetery is situated at Luxor, on the Nile. Here repose the mummified bodies of millions of sacred cats. Their remains are side by side with the bodies of kings and emperors in mausoleums.

FOR SUN-STROKE, INSOLATION OR THERMIC FEVER.—In addition to the usual external application of ice and cold water administer internally the following: Rx Acetanilidi, 3 iss; spts. ammon. arom., 3 viij. M. Sig. One ounce in a pint of water every 2, 3 and finally every 4 hours, according to height of temperature. In cases of complete exhaustion one drachm of acetanilidi to each ounce of aromatic spts. of ammonia administered every hour for 3 or 4 doses is preferable; a double dose may be given for the first dose if temperature is 110 degrees or higher.—(E. L. Quitman, M. D. C., Chicago, Ill.)

A NEW TÆNIAFUGE.—The *Arte Medica* for August 24, cites the following from the *Giornale di farmacia, di chimica e di scienze affini*, 1902, as a "certain and innocuous tæniafuge for [human] adults": Rx Black copper oxide, 6 grammes (90 grains); calcium carbonate, 2 grammes (30 grains); levigated white bole, 12 grammes (180 grains); glycerin, q. s. M. ft. pil cxx. Two pills to be taken four times daily, avoiding acid foods. On the last day a dose of castor oil should be taken.

THE "amphitheater clinic" at which the instructor operates and only tolerates the student to "look on" has been supplanted at the Chicago Veterinary College by a surgical clinic at which the senior students are the operators and the junior students are the assistants. Twelve hundred operations on living subjects under the influence of chloretoe were performed during the session of 1901-1902.—(L. A. Merillat, M. D. V., V. S., in *C. V. C. Quarterly Bulletin*.)

THE PATHOGENESIS OF EQUINE PNEUMONIC EMPHYSEMA.

BY PROF. A. H. BAKER, V. S., CHICAGO, ILL.

A Paper read before the 39th Annual Meeting of the American Veterinary Medical Association, Sept. 2-4, 1902.

Considering the fact that this disease materially injures the victim of it, reducing his market value and usefulness, in some cases almost to uselessness, and considering that it is very prevalent in the Eastern, and increasing in the Western part of this country, it becomes one of the most important subjects for our consideration, and our duty to exert our influence on the farmers, to induce them to harvest their fodder at such a time as to reduce the indigestibility of it, and on those having the care of horses to observe better hygiene in the feeding and watering of them to prevent this distressing, and, in all chronic cases, incurable affection of horses.

Pneumonic emphysema is a reflex neurosis due to faulty dietetics in 99 per cent. of the cases, the remaining one per cent. being due to previously existing pulmonary affection, viz.: bronchitis. The origin of this reflex neurosis is in the gastric ramifications of the pneumogastric or vagus nerve. This neurosis, arising in the stomach, produces morbid anatomy in the lungs primarily and only; the cardiac complication arises secondarily and consequentially. The gastric manifestations are entirely functional, those of indigestion, among which I may mention thinness of flesh, pot belly, long rough coat, profuse evacuation of gas per ano and the liability to flatulent colic, owing to the distention of the stomach and reduction in quantity of the gastric juice. The bowels also become greatly distended and digestion is so tardy and weak that fermentation of the food is excessive, giving rise to the increased flatus. The disease is induced by a glutinous appetite; a poor feeder never has it. The horse with heaves is inclined to eat everything in sight. It is produced by long continued overeating on overripe hay. The two kinds of hay that I have had experience

with, as causing emphysema, are timothy and red clover. These grasses when left to get too nearly ripe before being cut for hay become very ligneous in their stalks, so much so that the lower half of each stalk is wholly unfit for food for horses. This overripe hay fed liberally to horses for weeks or months produces a long continued overdistention of the stomach of the gluttonous feeder; this produces a neurosis of the gastric portion of the vagus, at first hyperæsthesia, followed by enervation, which creeps forward and involves the pulmonary branch, the source of pulmonary innervation, in a neurosthenia that weakens the contractility of the lung substance and lessens its power to expel the tidal air. The disturbance is purely functional at first, manifested by rapid breathing, frequent cough, dilatation of the nostrils and more or less lassitude. If the cause is not removed in the course of three to six months the contractility of the parenchyma of the lungs becomes impaired, resulting in dilatation of the vesicles, rupture of many into one, atrophy and pallor of their walls. This pallor is due to anaemia of the distended vesicles, reducing the calibre of the outlet for the blood from the right side of the heart by obliteration, to a greater or less extent, of the capillaries of the pulmonary tissue, leading to the dilatation of the right auricle and ventricle. These disturbances are purely functional for two to six months; during this time the disease may be said to be incipient, and is curable under rigid hygienic rules, but if the cause is not removed, the morbid anatomy soon becomes chronic and incurable, and gives rise to the double expiratory motion of the organs of expiration. The first half of the expiratory act is performed naturally and with ease, but the contractility of the lungs is so seriously impaired that the abdominal muscles are brought into strong contraction to expel the balance of the tidal air. When this is accomplished they relax quickly and drop back spontaneously into their natural positions; then the inspiration takes place normally. This disease is subject to frequent exacerbation of symptoms by overeating and drinking or active work soon after meal, especially if facing the wind.

It may be safely said, that pneumonic emphysema never occurs in horses at pasture, nor on prairie hay, nor in horses getting liberal quantities of oats and correspondingly small quantities of hay, nor on timothy and clover that were cut at the proper time.

After thus considering the connection between cause and effect, the question of prophylaxis naturally arises. The question, when is the proper time to cut timothy and clover, suggests itself. In my opinion, it is when the seed is in the milk. In order to catch them in this stage of development they must be cut a day or two after they are in full bloom. Those grasses mature very rapidly, and once they have passed the full bloom period the stalks become woody very quickly, so much so, that if left a week longer, the lower half of the stalk is not only unfit for food, but actually injurious to the horse that eats it.

As a further protection against emphysema and to maintain the stomach in a healthy condition, horses should be fed sufficient grain to make it unnecessary to give them more than a moderate amount of hay, and gluttonous feeders should be muzzled after they have consumed their rations to prevent them from engorging themselves on their bedding.

The European authors do not recognize the influence of dietetics in the etiology of this disease. The English hint at it, but fail to give it any importance. Professor Law, in Volume I. of his admirable work on "Veterinary Medicine," on page 274, says, under causes : "This disease is essentially the result of faulty feeding and working, though preexisting diseases of the air passages and sudden, violent muscular efforts no doubt occasionally contribute to its development." On page 278 he says : "The question arises how a disturbing cause operating directly upon the digestive organs should affect the respiratory in such a marked and permanent manner. It cannot be because of the gastric and abdominal distention, since pregnant mares, though in a state of much greater plentitude, are not thereby rendered liable to broken wind ; and if they have previously suffered from this infirmity, the symptoms are less

marked when breeding." Then he refers to a theory advanced by Dupuy, that certain disturbances of the stomach and intestines so impair the function of the vagus nerve that the lungs are affected, at first functionally and afterwards structurally, but no theory is advanced as to the cause of this disturbance resulting in emphysema. The point I wish to emphasize is that long continued distention of the stomach, not by any particular kind of food, but by food of a particular quality, is the cause of emphysema, and this particular quality is found in the rank growth of the grasses above mentioned on the rich soil of our Western prairies, in which case it is specially necessary that it should be cut before the stalks become woody.

ESERINE IN COLICS.—To those of the profession who use eserine sulphate (and every one should use it) we advise that you purchase it in one and one-half ($1\frac{1}{2}$) grain tubes, this being the usual dose, and thus it is always fresh and active. If you have become dissatisfied with the action of this drug in the tablet form or in the larger containers, we suggest you try it again in the $1\frac{1}{2}$ grain tubes.—(*E. L. Quitman, M. D. C., Chicago, Ill.*)

NEW ZEALAND authorities are determined at all costs to put a stop to the importation of disease germs into that country. Recently a law was passed providing that bones either in the piece or ground up for manure must be disinfected and thoroughly sterilized at the port of embarkation. Dr. Gilruth chief veterinary official for New Zealand states that anthrax has been imported in ground bones, an outbreak of that malady in New Zealand having been traced back to a shipment of this sort.

THE CAT'S TENACIOUS HOLD ON LIFE.—*Chicago, Ill., Oct. 18.*—Strange noises, coming apparently from a supposed solid brick foundation in the northeast corner of the new Post Office Building, puzzled workers upon the structure for the last six weeks. The mystery was solved by the removal of a portion of the foundation and the discovery of a black and white cat in a space barely large enough to permit of the entrance of its body. As a layer of rock was removed the cat leaped out, and three workmen who stood near fell back in surprise. The cat had been lying in the little space for six weeks. No one knows upon what it subsisted, as the workmen were unable to find any food in the small enclosure.—(*New York Herald.*)

EQUINE TROPICAL DISEASES—PARTICULARLY ULCERATIVE LYMPHANGITIS.

BY COLEMAN NOCKOLDS, M. D., V. S., VET. 5TH CAVALRY, U. S. ARMY, BATANGAS, P. I.

All the diseases which we have seen in the Philippines during a period extending over two years are more or less common to tropical countries of the Eastern hemisphere and most probably exist in the Western tropics. There are not any but what have been described more or less accurately by veterinary surgeons and others from time to time since Europeans first set foot in the tropics. The different veterinary periodicals and works, especially by Europeans, contain all that is known of these diseases up to the present time, and from a diagnostic point there is no reason why a veterinarian visiting these countries and seeing these diseases should be led to error. The characteristics of the living and the dead have been repeated again and again in almost every language, but there is much to investigate as regards the successful prevention and treatment of these maladies. Of course, years ago writers and investigators were unable to study causes because of not having the appliances, but nowadays there ought not to be any great difficulty with the means which we have at hand. I believe that no great mistake is made by me when I state that all diseases of an infectious nature are caused by an animal or vegetable parasite, which attacks their host in one way or another. Although not at present thoroughly acquainted with the history of many of these, it is to be hoped that in the near future investigations will bring to light at least enough of their modes of action and habitat to successfully combat many of these troubles with which the veterinarian is utterly unsuccessful at the present time. We are not alone in this, as our medical *confrères* have essentially the same condition before them as we have. Not only is this true of tropical diseases, but of those occurring in temperate climates, but perhaps hardly in such large proportion.

Among the diseases which seem to be peculiar to tropical climates, the following are common out here:—

Surra.

Myotic dermatitis (adobe itch).

Barsatti—bursatte.

Kumree—Kamri.

Ulcerative lymphangitis.

Tropical ulcers.

Chiber.

Besides which the following exist, which can hardly be classed as tropical, although occurring more frequently in tropical countries under suitable conditions :

Tetanus epidemic.

Pan-opthalmitis infectious—periodic ophthalmia.

Quittor.

Canker.

Thrush.

Parasitic diseases.

Colics and Pneumonias are of rare occurrence, as are most of the common home ailments. During the dry, dusty season there is often a mild coryza, which runs through the troops.

Founder is frequent with horses on the march, most often through losing a shoe and marching barefooted over rocky ground, river beds, mountains, etc.

Thrush and Quittor and occasionally *Canker* are always of a persistent and malignant nature, and usually occur during the rainy season, and are the result of irritation from parasites in the mud or water.

Tetanus is serious, and fourteen horses have died from that disease during these last three months from three troops, and several have been attacked by a mild form and have recovered. I could not notice that antitetanic serum was of any benefit, although freely used.

Glanders is not particularly common, and I believe it never existed here until brought out by Americans. I have never seen a case among the native animals, although two years ago there

was quite a lot of talk about native ponies dying from it. I think that surra and not glanders was the disease. Two troops of my regiment have been decimated by glanders; they caught it from American horses, quartermaster stock, which at the beginning of the Philippine trouble was shipped out here promiscuously without any thorough examination before leaving American ports.

"A" Troop lost and destroyed 13 glandered, and "C" Troop, 30. These troops were quartering near each other in Tayabas Province. It is probable that it was stamped out, as thorough precautions were taken and no fresh cases have occurred.

Infectious Pan-Ophthalmitis.—Of all horses that are condemned as being of no further service for cavalry purposes this disease claims the most. One reason perhaps is that all, with few exceptions, of native ponies suffer from it. It is the real old-fashioned "moonblindness," with periodic inflammation, and final involvement of the whole eyeball, with complete loss of vision. It may be more or less hereditary among the native ponies, but many troop horses that came out here after they were ten with good eyes have lost their eyes through this trouble.

Parasites.—It is more than probable that animals in these islands suffer from every variety of ecto and endo parasites in existence. Every autopsy shows a variety, both macro and microscopically; worm in the eye is of frequent occurrence.

Anthrax.—One case has been reported up in the northern part of the island of Luzon, but it is to be hoped that it was a case of mistaken diagnosis (such cases have occurred, even out here), although the climate and soil would seem to be in typical condition for the anthrax germ.

Rinderpest among cattle has existed for a large number of years, according to information gathered from the natives.

Ulcerative Lymphangitis and *Epidemic Tetanus* are the two diseases most prevalent among horses and mules in Batangas and Tayabas provinces at the present time. *Tetanus* is fully described in most veterinary text books on medicine, but as to ul-

cerative lymphangitis I think that Dinwiddie's translation of Mosselman and Lienaux's "Veterinary Microbiology," on page 265, describes a micrococcus discovered by Rivolta and seen by Nocard in the pus and lesions of African farcy. Dinwiddie remarks that several practitioners have described the appearance of chancres of acute glanders on the nasal mucosa of animals attacked, but the bacillus of glanders was absent and the cryptococcus of Rivolta present in these lesions, thus showing a disease related to lymphangitis and not to glanders. Hayes' "Horses on Board Ship" mentions ulcerative lymphangitis, and also in his translation of Friedberger and Fröhner, Vol. I. If, as Nocard and Sivori state, the bacillus seen by him in the discharges and lesions of ulcerative lymphangitis in 1896 and the bacillus of Preisz are identical, then this disease has a wide field indeed. (See 16th Annual Report, Bureau of Animal Industry, by Dr. Salmon, page 638, on the "Nature, Cause and Economic Importance of Ovine Caseous Lymph-Adenitis," by Victor A. Norgaard and John R. Mohler). But it seems as if these two diseases were identical there would have been noticed more horses suffering from it in the United States. In Scotland the disease known as "Cruels" has been recognized for many years, and is identical with sheep disease caused by bacillus of Preisz, described by Norgaard.

The following facts are founded as the result of personal observations, with the assistance of Mr. Root, veterinarian in charge of the brigade and depot animals in Batangas P. I. The microscopical observations were made chiefly by Major A. L. Haines, Medical Corps, U. S. V., who also assisted me in my investigations of surra and rinderpest, not only in the laboratory of his hospital, but by personally attending many autopsies and collecting material for culture and examination.

ULCERATIVE LYMPHANGITIS.

*Epizoötic Lymphangitis. African Farcy. Benign Farcy. Infection Lymphangitis. Lymphangite Ulcereuse chez le cheval.
Pseudo Tuberculosis. Tropical Ulcers?*

This is a specific infectious disease, characterized by the ap-

pearance of morbid lesions in the lymphatics and the formation of multiple abscesses in the region of the affected parts, which eventually burst and form ulcers of an indolent nature, but with a tendency to heal, and leave cicatrices.

It seems to be of the nature of a miasmatic disease, and does not spread by actual contact, the microorganism gaining entrance into the system through a wound or even slight abrasion. In all cases there is evidence of having been a wound at the site of the first apparent lesion. A swelling, from the size of a pea to a walnut, is often the first thing noticed, or the leg may be swelled up without any tumor being apparent; but soon the lymphatics in the affected region swell, and later large areas become involved. In the case of a limb it often swells to an immense size, three or four times larger than normal; in time small circumscribed swellings appear, which eventually burst and suppurate, forming indolent ulcers, which later on heal, leaving cicatrices. This process goes on at irregular intervals. Although generally confined to one or more limbs, usually the hind, any part of the body may become involved later by metastasis. The bones, lungs, connective tissue and muscles are involved, as shown in the autopsy. Although ulcerative lymphangitis is common at all times of the year, it is more prevalent during the wet season (all tropical diseases seem to be). Sometimes the external lesions are few and confined to one locality; at other times the larger part of the body may be covered. The hind limbs are most commonly the seat of swelling and ulcers; next to them the fore. The animal becomes emaciated and the temperature elevated, especially during the first part of the disease. The animal has an unthrifty look, but appetite not much impaired. Occasionally nodules and ulcers appear upon the nasal mucosa or eyes. This disease runs a chronic course. The complications that may occur, but are rare, are pyæmia, metastatic pneumonitis and septicæmia. If anything, there is a greater percentage of mules attacked than horses.

The mortality is about 15 per cent. After recovery from

acute disease, the limb often remains thickened and scars are always visible.

The number of cases that have been brought to my notice during twelve months, from August to August, are as follows in the 1st Cavalry, of which there are eight troops, averaging 85 horses each :

- "A" Troop, bays, 3, February, 1902.
- "B" " " 2, December, 1901.
- "C" " blacks, 4, January, 1902.
- "D" " greys, o.
- "I" " light bays, o.
- "K" " bays, 1, March, 1902.
- "L" " brown, o.
- "M" " sorrels, 3, August, 1901.

Transport animals of 1st Cavalry, all colors, 96, mules and horses, one brown mule.

In the quartermaster's stock of the 3d Separate Brigade, which averages 600 horses and mules, twenty-two head, chiefly mules, have been affected since last January, 1902. At present there are on sick report seven (four horses and three mules) from this disease.

The troops belonging to the 1st Cavalry are scattered far and wide : there are three at Batangas ; one at Lipa, 18 miles east ; one at Tayabas, 60 miles south ; one at Buann, 4 miles north ; one at Taal, 12 miles north, and one at Balayan, 30 miles north. This disease is often mistaken for farcy, but the clinical symptoms are easily distinguishable, besides there is no reaction to mallein, and in the troops where it has occurred no other cases have broken out except in "B" troop, which has at present two cases, both recovering.

Differential Diagnosis.—Glanders : Ulcers in nose ; gland, in submaxillary ; mallein test ; glandular bacillus ; fresh outbreaks. Lymphangitis acute : Absence of ulcers ; acute disease ; hot and painful swelling ; line of chief lymphatics on affected limb involved, without generalization ; not infectious. Odema : Absence of ulcers ; swelling mostly at dependent parts ; gen-

eral appearance ; no fever ; disappearance on exercise. Surra : Hæmatozoa in blood ; several animals wasting away ; excessive weakness ; no ulcers. Tropical ulcers : These are nothing more nor less than wounds or abrasions that have become dirty by infection ; even the slightest scratch in this climate is liable to turn into a bad ulcer, which is surrounded by a thickened edge and has a hard base ; they are often single, but may be multiple, due to animal scratching himself and causing abrasions ; the local lymphatics are often swollen (it is noticeable that cavalrymen suffer from these sores in larger proportion than do infantrymen) ; the general health does not suffer, neither does the limb swell more than it ordinarily would when the animal is not exercised ; there is no metastatic formation as in ulcerative lymphangitis ; they heal slow, treated with simple surgical dressings, and in indolent cases actual cautery. Bur-satte : Circumscribed growths, filled with a red spongy tissue (resembling granulation) ; bulging out from the surface of the skin ; may be one or more in different parts of the body ; intense itching ; appetite not impaired ; neither is general health ; if cut or scraped bleed freely, and will be found to be composed of red granular masses, varying from a pin's head to a pea ; the surrounding tissue is often involved and feels hard. Chiber : This consists of an itching skin disease, confined to the coronet, which is red and hot, and as the hoof grows after the infection, it will be found wrinkled, somewhat resembling the horn in chronic founder, only the ridges are smaller. None of the above conditions really resemble ulcerative lymphangitis and ought not to be mistaken for it.

Autopsy.—Animal emaciated ; ulcers and abscesses in any part of the skin—the cheeks and jugular gutter and hind limbs mostly contain them ; affected limbs enlarged ; muscles very flabby and watery ; bowels and stomach normal ; liver pale, often almost white ; spleen enlarged and pulp softened ; kidneys pale and soft. All the lymphatics in the body may be affected but the submaxillary ; inguinal and mesenteric almost always very much enlarged and soft ; cervical and axillary may be in-

volved. Lungs normal ; heart soft and flabby and contains large white clots, as also do all the large veins and bronchial tubes and the lymphatic spaces leading from affected glands.

Bacteriology.—Not able to furnish complete investigations at present, but will at some future time.

Treatment.—Iodide of potassium and iron, antiseptics, and actual cautery to ulcers. Have great hopes for the hyposulphite of soda, which has been ordered as as extra medicine for treatment.

THE WORST OF ALL.—It is related of the late Dr. Gurdon Buck, whose penchant for liberal incisions into inflamed parts was well known, that on one occasion he opened an abscess that had formed in his own person. In telling of the matter, he remarked : " It makes all the difference in the world which end of the knife you're at, and it's the worst of all when you're at both ends."

ONE ON THE AUTO.—Admiral Robley D. Evans recently took a spin in a hired automobile, and as he sped along the thought came to him that he might well own a machine. So he began chatting with the chauffeur, giving his opinion of the gasoline, the air, the electric and other forms of " auto " and wound up by saying : " And now, my man, you ought to be a judge. What kind of a machine would you select ? " " Well sir," replied the chauffeur, " I've often thought it over, and came to the conclusion that if I wanted to buy one I'd save up my money and get a good horse."—(*The Horseman*).

THE lay press report the case of a man who awoke and missed his false teeth from his mouth. Believing that he had swallowed them, he at once felt gastric distress and submitted his case to a surgeon, who applied the X rays upon that organ, which seemed to verify the patient's suspicions. Gastrotoomy showed an error in diagnosis, and just as the external sutures were being placed in position, the victim's daughter rushed in with the missing teeth, which she had found under her father's bed. It was said later that the man would die from the operation. [A veterinarian would have applied his common sense to the proposition, and forced the conclusion that it was an anatomical impossibility for a set of false teeth to have passed unconsciously down the oesophagus, and thus permitted the patient to live pending the quest for the missing grinders.]

THE PREPARATION OF BLACK-LEG VACCINE.

BY CHARLES F. DAWSON, M. D., D. V. S., LAKE CITY, FLORIDA.

Preparation of the Virus.—The virus from which the vaccine is made is obtained either from an animal which has died from natural infection or from one which has died from an inoculation with virus. The dark spongy portions of the meat from the thigh, shoulder or back are freed entirely of all fat and intermuscular fascia and are cut up into strips of about one-half inch thickness. These are then hung upon nails or strings in a dry, cool, airy, fly-tight room for about ten days, to dry.

When thoroughly dry, the meat is pounded up in a mortar, or quicker results are obtained by grinding it in a coffee mill several times. The resulting powder is then passed through a 20-mesh sieve to free it of connective tissue.

Preparation of the Vaccine.—To each grammie of the meat-powder are added two c.c. of water. Mix in an inverted round-bottom bell glass with the hand or a spoon. Spread the dough thus formed in a layer one-quarter inch thick upon a ground glass plate or marble slab, and cut therefrom by means of tin pans, three inches in diameter, and one-sixteenth inch deep, much in the same manner as cakes are cut from dough, with the exception that the pans are slid sidewise on the slab and not lifted from it. This method insures an even distribution of the dough in the plates which is not attainable by any other method. The filled pans are then placed on wire-bottom trays in a thermostat kept at 92–93° C. for six hours. The thermostat should be so ventilated that the added water is all evaporated in about three hours. At this time, the cakes should begin to curl up and at the end of the sixth hour, they should be thoroughly dry. To prevent the cakes from adhering to the bottoms of the pans, they should be smeared with vaseline by means of a sponge. The cakes should not be removed too suddenly from the oven, as they are prone to re-absorb moisture; but the oven should be left open to cool off gradually. When

cool, the cakes are put into jars or boxes in a moisture-free atmosphere. They are subsequently passed through a coffee mill seven or eight times, to reduce them to a very fine powder. This mill for grinding the vaccine should never be used for grinding the original virus, and considerable care must be taken throughout the process to keep the vaccine and virus separated. In fact, the vaccine should be prepared in a separate room.

For sieving the vaccine an 80-mesh sieve is used. The top layer of the cakes is difficult to pulverize and is almost insoluble, so it is better to discard that part which is not sufficiently fine after seven or eight passages through the mill. The vaccine is now ready for testing for strength and immunizing properties. Two or three guinea-pigs receive intramuscularly in the thigh three-quarters of the calf dose (10 milligrammes), the same number receive one-half a calf dose, and three others receive one-quarter a calf dose. Their temperatures are recorded daily. The vaccine is prepared for testing by grinding up ten calf doses (100 milligrammes) in 10 c.c. of water, and straining out the insoluble portion through a thin layer of medicated cotton moistened with water; or a linen filter may be used instead. The maximum guinea-pig dose would then be three-quarters of 1 c.c. of this solution; the medium dose would be one-half of 1 c.c., and the minimum dose would be one-quarter of 1 c.c. Ten days after their temperatures have reached normal the guinea-pigs should be tested for immunity, by the inoculation of a minimum fatal dose of the unattenuated virus. As every lot of virus differs in virulence from every other, the fatal dose must be determined. This is done by inoculating several guinea-pigs with varying quantities of strong virus, beginning with one-tenth milligramme and increasing the dose for each succeeding animal by one-tenth milligramme. The minimum fatal dose for an unprotected pig is the size dose for testing for immunity in the vaccinated ones. The test is not always satisfactory, and past experience has shown that a vaccine which causes a noticeable temperature reaction in guinea-pigs which receive the three-quarter and one-half calf

doses, is safe. Should a vigorous guinea-pig die from the small dose, the indications are the vaccine is too strong, and might produce black-leg instead of preventing it. Such vaccine should either be discarded, or it may be moistened with an equal weight of water, heated at 90° C. for two hours, and re-tested.

A typical test would be observed in a lot of guinea-pigs which showed a rise of two or three degrees as a result of the vaccination, and no reaction as a result of the subsequent inoculation of the minimum fatal dose of unattenuated virus. As a matter of fact, this result can rarely be obtained and the pigs often show discordant results. Sometimes those which receive the smallest dose of vaccine show the greatest reaction. Where possible it is far better, safer and more to the point to test the vaccine upon range cattle.

Instead of dispensing the vaccine in the form of a fine powder, as is now being done by several commercial concerns, I have shown that an aseptic fluid black-leg vaccine is perfectly safe. Its main advantages lie in the fact that it is ready for immediate use. It renders the cumbersome outfit of mortar, pommel, etc., unnecessary. If made in the laboratory by skilled persons there is greater uniformity of product, than where stockmen or others not used to doing such work, prepare the solution by the old method. Aseptic fluid vaccine is made by the following method : The vaccine powder, say one gramme, is rubbed up in a mortar with 20 c.c. of water. To the paste thus formed are added 80 c.c. of pure glycerine. After thorough mixing, the solution is strained through a cloth of sufficient coarseness to allow a coffee-colored liquid to pass through. A suction apparatus will greatly facilitate matters. Vaccine prepared in this way will keep for a long time and needs only a syringe to apply it.

For attenuating the virus or making the vaccine, I have used with success a specially-made hot-air oven, instead of the expensive oil ovens generally used. It is much more easily regulated, and can be used at odd times for drying or sterilizing glass-ware, or even as an incubator for cultures. It consists of

a galvanized iron cylinder with a ventilating pipe entering the cone-shaped bottom. This cylinder is surrounded by another two inches greater in diameter, and is fastened to the inner cylinder by straps. Outside of all is an inch jacket enclosing completely a dead air space. The whole is covered with asbestos. The cover fits loosely over the top of the cylinder, is double, and when down in its place, the bottom rests upon a felt-lined flange of the inner cylinder, making a tight joint. The space between the top and bottom of the cover then becomes continuous with that between the inner and outer cylinders. Six tubulations connect with the interior of the oven for regulator, thermometer, and for gauging the rapidity of moisture evaporation. A small opening in the top of the cover allows ventilation for the Bunsen burner below, from which the heat is derived.

DR. FRED GETTLER, U. S. Army, Philippines, died in February last in the military hospital at Laoag, Ilios Norte, P. I., of abscess of the liver.

DR. R. J. WITHERS, one of the founders and president of the Chicago Veterinary College, now and for a number of years a resident of Los Angeles, Cal., where he enjoys immunity from his old enemy (rheumatism), was recently married.

DR. WM. M. BELL, of Nashville, Tenn., formerly professor of surgery and dentistry in the Kansas City Veterinary College, visited the REVIEW office the last week in September. He took his brother, a physician, who had been under treatment in one of the New York hospitals, to his home in Kansas City, before returning to Nashville. His brother died two weeks after reaching home.

THE EFFECT OF A MEAT DIET UPON FOWLS.—Frédérica Houssay (*Comptes rendus de l' Académie des Sciences*), in a study of the influence of a flesh diet upon fowls, observed that the amount of urea excreted is increased to three times the normal amount; that is, the quantity is three times as great as upon a grain dietary. The observer noted also that the kidneys increased enormously, coming to constitute nearly one-third the weight of the animal. The peritoneum presented a great quantity of black pigment, and the fat showed a marked change in appearance and taste.

REPORTS OF CASES.

"Careful observation makes a skillful practitioner, but his skill dies with him. By recording his observations, he adds to the knowledge of his profession, and assists by his facts in building up the solid edifice of pathological science."

TUMOR OF THE LIVER.

By HENRY TWEEDLEY, M. R. C. V. S., Buffalo, N. Y.

I submit the following case as tending to increase our knowledge regarding a class of diseases which has for a long time been in a more or less complete and uncertain state in veterinary annals—this being due either to the fact that affections of this organ are either very rare, or when they do occur, owing to uncertainty of diagnosis they are unable to be satisfactorily recorded. Reynal, in that splendid work, "Nouveau Dictionnaire Pratique de Médecine, de Chirurgie et d'Hygiène Vétérinaire," remarks, that if in veterinary medicine there are diseases still imperfectly studied, badly known and incompletely described, those are undoubtedly diseases of the liver. There is nothing more difficult than to form a certain diagnosis in affections of this organ; nothing more vague, nothing more uncertain, nothing more obscure, consequently, than that series of general symptoms, common at once both to alterations of the liver and to those which disturb the functions of the digestive and the respiratory apparatuses. The following case, which I think is rare, as I cannot find mention of it in our writings, is of some value in showing some of the symptoms which are present in these affections. The subject was a very small pony mare and had been affected for two or three weeks before I saw her, receiving little or no treatment. She was dull and off her feed (I have found in affections of the liver a remarkable loss of appetite), and on being led outside was very feeble and could only walk slowly and with evident difficulty; pulse 55 and full; temperature 103° ; conjunctival mucous membrane of a dark yellowish red color, and slightly watery; Schneiderian membrane not much altered; buccal mucous membrane rather red looking, and mouth coated with a pasty material. But the most peculiar thing was the appearance of a swelling situated in the left hypochondriac region, just behind or bordering the cartilages of the ribs. This tumor was soft, the size of a large apple, could be pressed inwards, and when so, it remained for about half a minute and then gradually reappeared; no rupture

of the abdominal wall could be detected, but it seemed as if the end of the rib protruded; this latter appearance was not fixed, but was made to disappear on pressure. Another thing also a little remarkable was an elevation of both fore limbs alternately, first extending one well forward, holding it poised a little; then, pawing the air for a few moments, she would drop the limb on the ground, pawing the ground for some time. The same movement would then be gone through with the other limb. This I was told was her continual habit. These movements were so constant and characteristic that in my reading I have watched for any evidence of it, but the only place where I have noticed anything resembling it is in Digby Collins' "Horse Trainers' Guide," where, under the head of "Inflammation of the Liver," he says: "This is a very painful disease and may be ascertained by the horse holding up one or other of his fore legs during the spasms and turning round to look at his side frequently."

The swelling or tumor on the side showed no signs of tenderness on pressure, no heat nor any apparent change of the skin. Not to take up too much of your space, I will only state that I diagnosed it as an abscess of the liver, and prognosed death, asking to be informed when dead, so that I could make an autopsy. Died soon after, but as I could not go to the autopsy, the liver was preserved, having a large tumor of a fleshy appearance, the substance of the liver being soft and disintegrated. I was sorry I did not see it early enough to ascertain its exact nature.

A BLOODLESS THYROIDECTOMY.

By GEORGE H. BAILEY, State Veterinary Surgeon, Portland, Maine.

I was able recently to perform a bloodless operation upon a valuable horse belonging to Gen. John Marshall Brown, for the hazardous removal of an abnormal thyroid gland that had attained the dimensions of a man's fist, and already produced dyspnoea by pressure on the trachea whenever an attempt was made to use the animal in harness. The thyroid body is remarkable for the relatively enormous volume of its blood-vessels, its arteries being chiefly collateral with the common carotid, and forming plexuses on the tracheal walls. While the function of the gland does not seem to be thoroughly understood, it certainly has a peculiar influence over the process of nutrition, judging from the effect of loss of the secretion of the gland.

The immediate dangers of this operation are injury to the vagus and dangerous haemorrhage. The latter was entirely averted by the use of the solution of adrenalin chloride, $\frac{1}{1000}$. The solution was resorted to only to control capillary bleeding and render every step of the operation clearly visible, but it also made possible a practically painless and successful procedure. After using hypodermically a solution of cocaine and freely spraying the incision with solution adrenalin chloride, it was found that the anaesthetic property of the cocaine was perfectly blended and preserved.

Catgut ligatures were employed; the wound was closed with interrupted sutures, and upon removal of the aseptic dressing on the second day not even the smallest secondary haemorrhage occurred, and union by first intention seems already assured.

I have full faith that the solution of adrenalin chloride will furnish the veterinary profession with a most important and valuable adjunct in all such operations, as well as in neurotomy and tenotomy and so forth, where capillary bleeding has hitherto proved to be so easily and freely induced and not very readily controlled.

[NOTE.—Adrenalin chloride is described by Prof. Liautard in this number of the REVIEW in his interesting "European Chronicles."—R. R. B.]

URINARY CALCULI IN A DOG.*

By C. A. WHITE, M. D. C., Chicago, Ill.

The patient, an Irish setter, four years old, was brought to the hospital with a history of urethral stricture, and suspecting calculi I passed a silver probe and found posterior to the os penis a collection of calculi varying in size from a pin head to a five-grain quinine pill. These I removed after placing animal under an anaesthetic, by cutting through to the urethra and removing with a small curette, afterwards irrigating the bladder and urethra with a one per cent. solution of permanganate of potash. In three weeks dog was returned to owner, wounds having healed by granulation, and animal seemed in good health up to nine months following the operation, when the dog was said to have been taken suddenly sick while on a hunting trip in North Dakota and returned to the hospital and died twenty-four hours later.

On post-mortem examination it was found that both kidneys were completely disintegrated, the capsule of each containing

* Reprinted from the *Quarterly Bulletin of the Chicago Veterinary College*.

a dark red semi-fluid material mixed with pus. Each kidney had attained the size of a teacup. The right kidney had ruptured and liberated its contents in the abdominal cavity, and in the pelvis of each kidney were found calculi, varying in size and collectively weighing two ounces.

A RATHER INTERESTING CASE.

By W. H. DALRYMPLE, M. R. C. V. S., Baton Rouge, La.

Owing to temporary indisposition of the local veterinary practitioner, I was called, on August 23d last, to see a mule belonging to the City of Baton Rouge that had met with an accident on the street. The animal had been engaged in the scavenging department, and, while the man in charge was busy some little distance from his cart, ran off, and fell on a broken, irregular piece of crockery, or earthenware, which penetrated the abdominal wall in the median line, about 10 or 12 inches posterior to the ensiform cartilage of the sternum, and punctured the intestine. When seen by me, a short time after the accident, a watery fluid was gushing through the external opening onto the ground. I at once saw that the fluid was issuing from the intestine, and which, although coming away incessantly, was intermittent as to quantity, due, no doubt, to the irregular force given to it by peristaltic movement. It should be stated that the broken piece of "jug" had a neck on it about two inches long, the penetrating end being about half an inch square, blunt, but having four cutting edges. Owing to the shape of the offending body, and the presumably irregular opening it was most likely to make in the wall of the intestine, it was a question whether surgical interference (enlarging the external opening and stitching that in the bowel) would not produce greater irritation and graver after-effects than simply affording protection and support [to the parts, and depending upon *vis medicatrix naturæ* to do the rest. The latter course was decided upon. The animal was taken to the city's stable, a thick pad of lint cotton, saturated with carbolized oil (3 per cent.), was placed over the external wound, and a broad body bandage on top. There was an almost continuous dripping, with periodic spurts of fluid, for a period of about 11 or 12 days, but the animal never, from the first, showed any indication of febrile disturbance. Fluid aliment was prescribed, which, however, was restricted so as to permit of the healing of the intestinal wound as early as possible. When first seen, a small portion of the

wall of the intestine was inclined to protrude, which was afterwards permanently reduced by the continuous pressure of the antiseptic pad and bandage. On my leaving for the Minneapolis meeting of the A. V. M. A., on August 30th, the injury had then been in existence ten days, and a certain amount of fluid was still dripping from the wound through the porous dressing, and I left instruction, should symptoms of abdominal pain supervene, that the local veterinarian was at once to be summoned, as I feared the possibility of peritonitis. On my arrival home on September 9th, and on making inquiry regarding the case, I was informed that the fluid had ceased dripping on about the 12th or 13th day after the accident, the outer wound almost healed up; that the mule had been working for two or three days, was on regular feed again, apparently all right; and has remained so ever since, which, at this writing, is thirty days since date of injury. Within the past few days, this same animal has been again engaged in the runaway business. This is a case in which it may be said, that, perhaps, "discretion was the better part of valor," and shows what nature will do, unassisted, so to speak, in serious abdominal injuries, except in the form of the necessary protection against infective media from without, and a rational alimentation. Possibly the above hastily reported case may be of interest to some of the readers of the REVIEW.

UNUSUAL CASE OF LAMENESS.

By HENRY TWEEDLEY, M. R. C. V. S., Buffalo, N. Y.

The following case is one which I think has been seldom seen; at least, in quite an extensive reading on the subject I have not met with anything approaching it.

The subject was a heavy draught horse in excellent condition, and had not previously suffered from any lameness. He



A.—Deposit between the laminæ forcing the os pedis downwards and backwards.
B.—Os pedis protruding through the sole.

rather suddenly became lame on both fore legs, without showing anything prominently, to account for the lameness; was not excessively lame, but was quite hampered in going; careful examination failed to reveal much positive information on the subject, so his coronets were rubbed with stimulating liniment daily; he continued in this condition without any material change for about a week, when on being examined one morning he was found to have both coffin bones protruding through the soles, presenting an appearance as indicated in the cut.

A solid deposit had formed between the wall of the foot and the os pedis, forcing the latter through the sole. This deposit, which I can only account for as being of a rheumatic or gouty nature, must, I think, have formed rather suddenly, as no gradual change had been witnessed in the sole, a fact which would have been noticed, as the horse was under careful watch owing to the difficulty of coming to a correct diagnosis regarding it.

This termination I have seen in laminitis, but in this case there were no symptoms of laminitis or acute pain. The horse was killed.

DR. ADOLPH EICHHORN, of the Bureau of Animal Industry, and editor of "German Review" for this journal, returned from Europe on Oct. 20, having visited Hungary, Germany, Italy, France and England, spending most of his time on the Continent at the veterinary colleges, and inspecting the abattoirs of the principal cities. He will tell REVIEW readers a little later the details of his trip. He spent several days with Dr. Liautard in Paris, who introduced him to the famous men of Alfort.

JOSEPH F. LENNON, M. D. C., of Joliet, Ill., died in that city, on Aug. 4, after an operation for liver trouble of long standing. He had built up an extensive practice, and the Joliet *Republican* speaks of him in the highest terms for professional ability and personal probity. He was thirty-six years old.

JOSEPH B. HUGHES, of New York, sued Felix Warburg, of Kuhn, Loeb & Co., bankers, for \$50,000 for damages occasioned by the frightening of the former's team by the latter's automobile. The jury in the United States Circuit Court awarded the plaintiff \$12,070, he having lost a valuable horse and sustained injuries to his spine. This verdict establishes a precedent in the matter of horses frightened by automobiles.

DR. T. S. CHILDS, of Saratoga Springs, N. Y., entered the New York State Veterinary College, 1st inst., for the purpose of taking a special course in surgery.

EXTRACTS FROM EXCHANGES.

ENGLISH REVIEW.

By Prof. A. LIAUTARD, M. D., V. M.

ŒSOPHAGOTOMY IN THE CAT [*J. R. McCall*].—Although the two cases recorded by the author present nothing very unusual, they are nevertheless interesting, illustrating, as is said in the report, the *accommodating power* of the cat under peculiar circumstances, and may help to justify the old saying that cats possess nine lives. In the first animal, which, of course, presented all the symptoms of œsophageal disturbance, a sharp projection was found in front of the breast, just at the arch formed by the two first ribs. Upon this an incision was made, and with forceps a lady's hat pin ($7\frac{1}{2}$ inches long) was extracted. To remove it entirely the incision had to be enlarged to permit the round black glass head to come out. After a few days the animal was sent home. The second case was very similar, and there again the point of the pin was detected at the entrance of the chest between the two first ribs. A similar operation was followed by the same result, with the exception that acute extensive inflammatory swelling took place in the neighborhood of the wound, which, however, subsided under proper treatment. In both cases the foreign body was swallowed head first and reached the stomach and passed through the pyloric orifice into the intestine.—(*Vet. Record.*)

A RECORD IN THE USE OF CHLOROFORM [*C. Pierce, F. R. C. V. S.*].—After referring to extracts from Fröhner, who, during the years 1898–99, had operated on 142 horses under chloroform without an accident, and from Cadot and Almy, who in their “*Traité de Thérapeutique Générale des Animaux Domestiques*,” who out of 800 cases recorded one death from chloroform intoxication, one from asphyxia and two from pneumonia, and also cases of vomiting and paralysis of the vocal cords, the author gives a brief record of his experience, consisting of operations performed upon 2100 horses, and never had one fatal case. Before he made use of the anæsthetic he averaged about one accident in four hundred cases—such as fractures of the vertebrae, pelvis, ribs, etc. Since its use the only trouble he had is a fracture of the cervical vertebrae due to carelessness in casting.—(*Vet. Record.*)

MAMMITIS IN A HEIFER WITH EXTENSIVE SUPPURATION [*W. Scott, F. R. C. V. S.*].—The animal had for four months been suffering with inflammation of the udder, and, notwithstanding treatment, grew worse, the mammae having acquired enormous proportions. "It was exceedingly tense to the feel, somewhat tympanitic on percussion, and on succussion a liquid sound could be detected." The gland measured 5 feet 3½ inches in circumference on its widest part. The quarters of the organ seemed to be entirely obliterated, the whole coalescing and the teats themselves hung as rudimentary projections. The diagnosis was positive, and the tumor tapped at its most dependent part with a lance-shaped hot iron on account of the thickness of tissue to go through, being nearly three-quarters of an inch. The fluid collected was between four and five gallons, besides masses of broken down parenchyma, yellow in color, friable in consistency and odorless. The cavity was treated antiseptically and the organ returned to the size of an inactive gland.—(*Vet. Record.*)

ARE BOTS EVER FATAL?—The question has already been presented and discussed, and has *de novo* received a new impulse by a few articles that have appeared lately in the *Veterinary Record*. In one of them a case is recorded of a horse that died with colic, and in which the stomach and duodenum were found full of bots, a mass of them detached from the stomach having completely plugged the duodenum and given rise to enteritis and peritonitis. Another case is then mentioned by E. L. Dixon, where a three-year-old colt, which had died from colic, and in which at the autopsy the walls of the stomach were found ruptured and an immense number of bots found attached to the cuticular and the villous coats of the organ. Finally Prof. J. R. McCall says the question is difficult to answer, as he has seen many horses affected with bots which seemed to be out of condition by their presence, while others were in the best of condition, and having died from other causes, although their stomachs were filled with those parasites. The theory of Bracy Clark, that by their presence they excite the gastric function cannot be entertained, and it must not be ignored that bots have been known to perforate the wall of the stomach and have found their way into the peritoneal cavity, and evidently their presence cannot at all events be regarded as beneficial. Prof. McCall sees no reason why bots if present in large numbers in weak, thin horses may not prove fatal by inducing colics, and latterly enteritis or peritonitis.—(*Vet. Record.*)

CHLORETOSE AS GASTRIC SEDATIVE IN DOGS [*Chr. Taylor, M. R. C. V. S.*].—This drug has given the author excellent results in canine practice, and he records two cases where its use relieved the animals very rapidly. To one bitch twelve months old, which was suffering with distemper, had constant vomiting of all kind of food and was in a state of apparent collapse, he gave five grains of chloretone crystals in gelatine capsules. This was followed by several hours of good sleep, and when food was given the vomiting had entirely ceased. Five more grains were given later, when the nervous twitchings of the chorea which she also had stopped and rapid recovery went on. To another older animal, suffering with ascites, probably due to liver disease, and which had constant vomiting of all foods and fluids, although she was almost in a dying condition and unable to stand any tapping operation, the author gave also five grains of chloretone morning and evening. After the first dose the vomiting had ceased and the animal kept all the food, which was given to her up to the time of her death, which occurred three days later.—(*Vet. Record.*)

CARCINOMA OF THE BLADDER OF A HORSE [*Prof. J. McFadyean*].—An old chestnut gelding, about twenty, had for a year previous to his death passed blood with its urine. At the post-mortem special attention was given to the condition of the bladder, and it was found that the anterior extremity of that organ presented a remarkable depression, due apparently to an introversion of the wall at that point, and when the bladder was grasped, it seemed as if the cavity was occupied by some firm body. A slit through the bladder exposed this body under the shape of a tumor, about the size of a goose's egg, growing from the anterior end of the bladder. Its surface was rough, ulcerated and at some places covered with small blood clots. Its consistency was rather firmer than that of liver and on section it presented a white surface finely mottled with grey. The urine contained in the bladder was turbid, tinged with blood, but without putrid odor. Subsequent microscopic examination showed that the tumor was of carcinomatous nature. The other organs and lymphatics were normal.—(*Journ. Comp. Patho. and Therap.*)

PECULIAR CASE OF INTUSSUSCEPTION OF THE SMALL INTESTINE OF A HORSE [*J. McFadyean*].—The many peculiar forms that intussusception may present are increased by this very interesting case, which occurred in a seven-year-old chestnut mare and was found at the post-mortem, made when she

had succumbed to abdominal trouble. "When the abdominal walls were reflected, the peritoneal cavity was found to contain a considerable quantity of deeply blood-tinged liquid and the displacement of the intestines showed that the mesenteric veins of the posterior part of the small intestines were much distended with blood and had haemorrhages along their course. Further examination revealed an intussusception, which appeared to begin about six inches from the termination of the ileum. On removing the whole intestinal mass it was found that three feet of intussuscepted ileum had passed into the cæcum, whose contents were stained with blood. The loop of the small bowel in the cæcum had a spiral arrangement and its outer surface was formed by the everted mucous membrane, which was deeply congested. The loop was also tympanitic."—(*Journ. Comp. Patho. and Therap.*)

FRENCH REVIEW.

By Prof. A. LIAUTARD, M. D., V. M.

PARALYSIS OF THE EXTERNAL POPLITEAL SCIATIC NERVE DUE TO THE EVOLUTION OF HYPODERMIC LARVÆ IN THE HORSE [*M. A. Darrou*].—On account of numerous subcutaneous abscesses due to the development of hypodermic larvæ a horse was laid up. He had them on the back, the ribs, the croup; each developed at various times, and when the tumor had a certain size the parasite was readily extracted through an incision of the skin and the wound treated antiseptically. One day the horse became suddenly very lame on the right hind leg, with all the symptoms of paralysis of the external popliteal sciatic nerve. The lameness kept up, when, after three days, a small oedematous swelling was observed on the upper part of the leg on its antero-external face. Suspecting the possible development of a larva pressing on the sciatic nerve, to facilitate its exit an incision was made over it, a little below and back of the external lateral ligament of the stifle, on a level with the point where the bifurcation of the nerve takes place. Two days after a vesicular larva, fusiform and similar to those of the other parts of the body, made its appearance through the edges of the incision, and was removed. In the evening the lameness was only very slight and all symptoms of paralysis had subsided.—(*Rev. Veter.*)

GASTRO-ENTERITIS BY TRAUMATISM IN A DOG [*M. A. Darrou*.]—This case is recorded to show the necessity of minute examination of the buccal cavity even in cases where only gastric disturbances are present. A fox terrier had frequent vomiting and nausea following deglutition of solid or liquid food. The intestinal functions are sluggish, injections and the use of the curette being necessary to empty the intestines, and yet there is no constipation proper. The conjunctivæ are slightly infected and there is general prostration, as observed in gastro-intestinal affections. After the administration of a dose of ipecac, bicarbonated water, and milk, the animal seems somewhat relieved, and the vomiting ceases, appetite returns and the ordinary diet is resumed. Then the animal shows efforts to spit; and the opening and closing of the jaws with protrusion of the tongue call special attention to the mouth, when, on raising the tongue, its frænum is seen cut transversally, and at the bottom of the solution of continuity a loop of strong thread is detected surrounding the tongue. The ends of the loop are tied near the pharynx and continued by a piece which must have extended as far as the pylorus, as at the extremity it is colored with yellow matter whose nature is too plausible. How was this foreign body not detected? At first the dog had only vomiting, with other symptoms justifying the diagnosis of gastritis, and as he refused all solid food, the traumatic nature of the trouble could not be supposed, the mouth not having been examined. While recent, the foreign body in the pharynx produced only nausea and vomiting, and later on there was a kind of accoutumancy and the animal was only disturbed by the gradual section of the frænum of the tongue by the loop of thread that each motion of deglutition had a tendency to draw towards the base of the organ.—(*Revue Veterin.*)

CURIOS CASE OF RADIAL PARALYSIS [*M. Leflat*.]—Called urgently to see a horse reported as having a fracture of the shoulder, the author was told that while at work he had suddenly become lame without having made a misstep or slipped. The animal is unable to walk, abduction of the leg is very painful and there is a dropping of the elbow, which is characteristic; yet when the leg is flexed, a crepitating noise is readily heard. Evidently the radial paralysis was present, but is there also a bony lesion? This supposition of fracture is laid aside after two or three days, as no manifestation of such lesions occurred. The animal was then put under treatment, but without any satisfactory result, and, notwithstanding fric-

tions and walking exercise, no change for the best. On the sixth day after the injury, the condition in the evening remained the same. But on the seventh day in the morning, all bad symptoms had disappeared; the animal stood straight, walked without lameness and trotted with only slight irregularity. In four days the horse went to work. Evidently the radial lesion was due to a blow from the pole of the wagon, and for the crepitus, it no doubt came from the articulation.—*(Rec. de Med. Vet.)*

PSEUDO-NEUROMA OF MEDIAN NEUROTOMY [*L. Dupas*].—The presence of a tumor at the extremity of the central nervous end after plantar neurotomy is not uncommon. Does the same occur after the section of the median? The author has not seen it recorded and on that account publishes the following:—A nine-year-old army horse has been disabled on several occasions and finally became very lame on both fore-feet with navicular disease. With all modern care and preparation he was operated upon on one leg, the right, by median neurotomy, and when relieved of the hobbles trotted sound on that leg. The wound, however, was somewhat troublesome in healing; large swelling, which kept on increasing and interfering with the motions of the leg, having lasted for several days. Finally it subsided and then a tumor, quite large, was detected at the point of cicatrization of the first operation; it is elongated, fusiform, rolling under the fingers, very sensitive and gives rise to excessive lameness. It was evidently a pseudo-neuroma. The animal was again operated upon and the growth developed on the external face of the central extremity of the nerve was removed after minute dissection to isolate it from the posterior radial artery, which laid underneath it and was adherent to it. The cicatrization went on and finally the animal was returned to work.—*(Rec. de Med. Vet.)*

GENERALIZED CARCINOMATOSIS [*Chr. Darmagnac*].—This bay horse has been losing flesh considerably of late and is given rest. He has all the symptoms of excessive anaemia, shows ascites well marked, nothing towards the heart, and examination of the liver reveals nothing. Rectal examination reveals a large tumor, partly closing the pelvic cavity and extending forward, it is very painful. To this is attributed the abdominal collection. The symptoms kept on increasing and finally the animal was destroyed. On opening the abdomen about 50 quarts of fluid were removed, and there appeared an immense number of tumors upon the abdominal walls and the viscerae of

that cavity. They are of various forms and sizes and all have the same macroscopic characters : general encephaloid aspect, white-yellowish in color, sometimes reddish, easily crushed and cut with the scalpel, and letting out a whitish fluid (cancerous fluid) on glass slides. The first of these growths, the largest, extends from the left iliac fossa to the kidneys. It is irregular in shape, weighs 32 pounds, and seems developed between the sheaths of the colic mesentery, of which but small traces remain. It is adherent to the vertebræ, the psoas muscles, surrounds and presses upon the abdominal aorta and its terminal branches and the large veins. It envelops completely the left kidney. The others or secondary tumors seem more recent in formation and are spread on the abdominal walls, the mesentery, on the tracts of the blood vessels, the two curvatures of the stomach, the spleen, the liver and even the bladder. The great omentum covered with them weighs 14 pounds. These growths are not so numerous in the thorax, although they are also disseminated all over. The diaphragm on the thoracic surface has only a few, while on the abdominal face they form a thick coat. In the lungs there are few patches of hepatization ; the pericardium and the heart are free. The lymphatics are hypertrophied and softened. The cerebro-spinal system is free from them. Experimental inoculations to rabbits and rats gave no result. Histological examination of these tumors show them to belong to the encephaloid type of carcinoma—one of the most severe varieties of cancer.—(*Rec. de Met. Vet.*)

ASCARIDES IN A CALF—BAD ODOR OF THE MEAT [*M. Mathis*].—A five-weeks-old calf killed for the butchery is found having in the last parts of its small intestine and in the large 394 ascarides, which weighed altogether about three pounds. While alive, the animal had been delicate, with poor digestion ; it had a marked peculiar odor, which spread through the barn he was kept in and which was peculiarly strong and disagreeable at the mouth. During three weeks that he was watched he only passed one worm. The cadaver had a *sui generis* odor, very disagreeable and increasing as the meat was exposed to heat, when it irritated the eyes of those who handled it. This odor was not that of ether nor of ammonia, but more that of a mixture of these two with methyllic acid. Long cooking did not remove it, but seemed to increase it.—(*Journ. de Zootech.*)

DR. JOSEPH R. HODGSON, of Brooklyn, N. Y., recently successfully underwent his second operation for appendicitis.

CORRESPONDENCE.

RINDERPEST AFFECTING DEER IN THE PHILIPPINES.

BATANGAS, P. I., Aug. 18, 1902.

Editors American Veterinary Review:

DEAR SIRS:—During my investigations of rinderpest on the island of Marinduque, P. I., in April, 1902, an American officer of the Army Medical Corps, stationed at the garrison there, stated that he, with some companions, were out hunting deer in the mountains and approached quite closely what appeared to be a fine looking buck. He raised his rifle to shoot, but something about the deer caused him to lower his piece. It was then noticed that the animal was staggering, and the officer remarked that whilst watching it, the deer dropped to the ground dead. From what he had observed from seeing a large number of sick and dead cattle that were suffering or had died from rinderpest, he considered that the deer presented a well marked case, exhibiting all the symptoms of rinderpest as seen in the cattle and cariboa that were affected on the island. I might add that the natives reported most of the deer on the island (which is about 28 miles long and 23 miles broad) had died from the "peste."

COLEMAN NOCKOLDS,
Vet. 5th Cavalry, U. S. Army.

SOME MISSOURI MISSTATEMENTS STRAIGHTENED OUT.

KANSAS CITY, Mo., Oct. 13, 1902.

Editors American Veterinary Review:

DEAR SIRS:—I wish to make a correction of a confusion of terms in regard to the State and Interstate veterinary associations in this locality.

Dr. J. J. Repp, in an article entitled "External Ulcerative Ano-Vulvitis," read before the 39th annual meeting of the A. V. M. A., and published in the October number of the AMERICAN VETERINARY REVIEW, on page 595, relates that Dr. S. Stewart made a verbal report on the same disease before the Missouri Valley Veterinary Medical Association, Feb. 9, 1898. This was the Missouri Valley Veterinary Association. The word "Medical" does not belong there. It is the Interstate Association, whose members live in Nebraska, Kansas and Missouri.

Further on he relates that Dr. C. Miller read a paper on the same disease before the Missouri Valley Veterinary Medical

Association, held in St. Louis, Oct. 3 and 4, 1900. The word "Valley" does not belong there. This was the State Association, whose members live within Missouri.

On page 705, same number, it was Dr. Chas. Doerrie who presided, instead of "Doenie." This mistake is probably due to my way of making a double "r."

Very truly yours, B. F. KAUPP, *Secretary.*

VETERINARY MATTERS IN THE PHILIPPINES.

SANTA CRUZ, LAGUNA PROV., P. I., July 26, 1902.

Editors American Veterinary Review:

DEAR SIRS:—To-night I received the back numbers of the AMERICAN VETERINARY REVIEW in good shape, and as reading matter is scarce, I can promise you that they will be read through, "ads." and all.

There is nothing of interest going on now in the Philippines. The 8th Infantry have gone home; they were stationed all around this place, and had Santa Cruz for headquarters. I have still about 250 head of quartermaster stock, horses and mules. "I" Troop, of the 6th Cavalry, has about 75 head. Now that the rainy season has set in "surra" is showing up fast. The transporting of any animals or herds from the Philippines should be watched closely and prohibited, as all animals are likely to carry the disease—horses, cattle, dogs and monkeys. I have found it in all. As for man, I am not prepared to say. I have examined flies that are full of blood and have found from one to three germs in them.

We have quite a number of cases of glanders, a few cases of tetanus, and some deaths from heat exhaustion.

The greatest drawback is the lack of shelter for the stock. They are all tied on picketlines, and we have few drugs, and they are of a poor quality, to say nothing of instruments.

Yours truly, J. MAC SMITH,
Q. M. D. Veterinarian.

PRESIDENT JAMES LAW, of the New York State Veterinary Medical Society, has appointed as delegates to the Veterinary Medical Association of New Jersey, Drs. Roscoe R. Bell, George H. Berns, E. B. Ackerman, Robert W. Ellis, and James L. Robertson.

THE NEW YORK STATE VETERINARY COLLEGE opened its session with a class of 62 students, 31 of whom are freshmen.

SOCIETY MEETINGS.

PASSAIC COUNTY VETERINARY MEDICAL ASSOCIATION.

This live local organization held its regular monthly meeting at Paterson, N. J., on Tuesday evening, Oct. 7, with President Wm. Herbert Lowe presiding. After the transaction of routine business and the consideration of matters pertaining to the welfare of the Association and the profession, Dr. J. Payne Lowe, of Passaic, read the following paper upon the subject of

"PROFESSIONAL ETIQUETTE."

"*Mr. President and Fellow-Members:*

"The subject assigned to me is an important one to each of us individually, and to us collectively as members of the veterinary profession, therefore, it is worthy of the consideration of this Association.

"It is only necessary for me to make mention of the rapid advancement our profession is now making in New Jersey,—of her strong State Association and the good work it is doing,—of the law passed at the last legislature regulating the practice of veterinary medicine, surgery and dentistry,—of the appointment by the Governor of a State Board of Veterinary Medical Examiners,—of the recognition our profession and associations are receiving from other professions and kindred organizations, and now of the organization in this county of the first county society in the State. In view of all this, more is to be expected from us. Is it not important that each of us, at all times, live up to a proper standard of professional etiquette? Etiquette has been defined as the formalities or usages required by the customs of polite society, or professional intercourse. It is not alone sufficient for the veterinarian of to-day to have the proper qualifications (both theoretical and practical), but he must observe the rules laid down by professional etiquette, for his own individual benefit and for the welfare of his profession.

"Every individual on entering the veterinary profession is entitled to all its privileges and immunities, and it then becomes his obligation to exert his best abilities to maintain its dignity and honor and to aid in advancing it as a science.

"We have in Passaic County, I believe, about twenty licensed veterinarians, all more or less actively engaged in practice, and coming into contact, directly or indirectly, more or less frequently. It is necessary for each of us to plainly under-

stand where our duties leave off, and where those of the next man begin. Under the law, we all have, whether graduates or non-graduates, the same legal right to practice, and, therefore, all are entitled to the same consideration.

"Often an owner has an animal taken acutely sick, or severely injured, and he summons a veterinarian, but perhaps the doctor is out and so he hurriedly calls another, who happens to be in, and he responds to the call at once. After a short time the first called doctor returns, and he too responds to the call, only to find someone there ahead of him. Under usual circumstances the case belongs to the man arriving first, so after a few brief words with the owner and veterinarian in charge, he should bid them good-day and retire, as it is undignified for him to remain, and perhaps his presence is annoying to the attending veterinarian, who at this time is busy and does not care to be interrupted; but there are duties of etiquette for the attending veterinarian to perform. He should, if possible, leave his patient a moment and greet his brother practitioner and make him feel at ease, and if the owner has acted rashly in calling upon both at or about the same time, he should explain to him that he has interrupted a practitioner in his routine work. Further than this, he should sustain his brother in collecting a fee for his visit; unless, of course, he has been tardy in responding to the call, in which case he should not expect a fee. If this is carried out with tact in practice it will have the effect of educating the laity, and prevent much annoyance.

"Again, sometimes two veterinarians are treating cases for their respective clients in a boarding stable. Certainly neither one of them should so far lower his dignity as to even attempt to examine or express an opinion of the case in charge of his brother practitioner.

"Sometimes a case under the treatment of a qualified practitioner does not show the improvement that the owner, from his standpoint thinks he should. It is only natural for him to do a lot of thinking, and here is where a lot of tact is required on the part of the veterinarian in order to hold the confidence of his client. Different clients will act differently under such circumstances. One may without the knowledge of the attending veterinarian, call in another practitioner. As a rule, if the second veterinarian so called in has his eyes open, and has the desire, he will discover what is going on. Knowing this, he should call upon the owner for an explanation, and should make no examination or give any opinion or treatment, until

he knows that the other veterinarian has been properly dismissed.

" If a consultation is desired by the owner, it is good sense for the practitioner to at once accede to it. In consultation the first object should be for the good of the patient, in the interest of the owner. Perhaps the case is complicated, or obscure in its nature, and a consultation with a man of experience and judgment will enlighten the attending veterinarian. Or, again, it may be held for the protection of the attending veterinarian, viz., in a necessarily fatal case where the owner thinks possibly something more might be done to save the life of his animal, and here the consulting veterinarian can restore the owner's confidence in his doctor. Or, again, a consultation may be held between several veterinarians with the object in view of dividing the responsibility, as in the case of a valuable animal that may have to undergo an operation ; or, again, it may be advisable to hold a consultation where litigation is apt to follow, in order to have sufficient expert evidence to satisfy the court of the conditions that existed.

" However, whatever is the object of the consultation, no rivalship or jealousy should be indulged in, and candor with all due respect should be exercised toward the veterinarian having charge of the case. The consulting veterinarian should, so far as he can conscientiously, sustain the attending veterinarian. After the history of the case is given and an examination of the patient made, they should retire for deliberation. Theoretical discussions should, so far as possible, be avoided as causing perplexity and loss of time.

" The conclusion arrived at should be given to the owner by the attending veterinarian in the presence of all concerned, and then, as a matter of courtesy to the consulting veterinarian, he may be asked to give the owner, in his own words, his opinion of the case. If the attending veterinarian has made a mistake in his case, and it is apparent, he should not take it to heart, if his brother points out his error. As long as it is done in a kind way and he is not unnecessarily exposed, he should feel that he has gained by the experience given him—and above all, young men in the profession should show due respect to those older and with more experience. Perhaps on some rare occasion the two veterinarians cannot agree (a thing to be regretted). If the difference of opinion is of any practical importance they should call in the third man and agree to abide by his opinion.

" I might go on almost indefinitely expatiating on the subject

of etiquette, but will only add that as professional men we should observe the rules of etiquette in a liberal way, not only among ourselves as veterinarians, but among all scientific men and to people in general.

"Gentlemen, I do not wish it to be thought that this is intended as a criticism toward the practitioners of Passaic County, and I have no fault to find, for it has been my pleasure and profit to meet many of you in a professional way, and can truthfully say that I have always been treated with perhaps more consideration than I deserved; however, we can all improve, and if the few salient points I have tried to bring out in my paper are actually lived up to in practice by the veterinarians of this county, it will elevate us and our profession in the eyes and minds of the community, and we will reap the benefit thereof."

NORTH CAROLINA VETERINARY MEDICAL ASSOCIATION.

This Association met in the Central Hotel in Charlotte on May 20th, 1902.

Three new members were added to the Association, several papers of interest were read, and the Texas fever situation in the State was discussed. A board was appointed to confer with the North Carolina Board of Agriculture with a view of having some laws passed in regard to this disease at the next legislature.

Election of officers resulted as follows:

President—Dr. Thos. B. Carroll, Wilmington.

Vice-President—Dr. W. H. Morris, Elizabeth City.

Secretary—Dr. J. W. Petty, Greensboro.

Assistant Secretary and Treasurer—W. C. McMackin, Raleigh.

The Association adjourned to meet in December next, in Raleigh.

J. W. PETTY, *Secretary.*

DR. M. H. MCKILLIP, President of the McKillip Veterinary College, Chicago, was selected by the Board of Directors of the Chicago Horse Show Association as chief veterinarian for the very successful exhibition held by it from Oct. 27 to Nov. 1. He had for his staff Drs. Frank Allen, N. E. Nettleton, and Gerald E. Griffin (of the U. S. Army).

HENRY B. AMBLER, D. V. S., Chatham, N. Y., was official veterinarian to the New York State Fair, held at Syracuse, Sept. 8 to 13.

NEWS AND ITEMS.

DR. PAUL FISCHER is now State Veterinarian of Ohio.

DR. S. S. BROOKS has discontinued practice at Brooklyn, N. Y., and removed from the city.

DR. J. D. SHEPPARD, of Langdon, N. D., has been appointed professor of veterinary science in the North Dakota Agricultural College, Veterinary Department, at Fargo, N. D.

DR. J. C. BURNESON, late veterinarian to the Ohio Agricultural Experiment Station, Wooster, Ohio, has received an appointment in the Bureau of Animal Industry and assigned to duty at the G. H. Hammond Co., Hammond, Ind.

DR. J. R. PETTY died in Greensboro, N. C., Aug. 15th, from injury sustained by being thrown by a horse on his face while performing an operation for stringhalt. He was only twenty-three years of age, and had just graduated in veterinary science last spring.

NO CIRCUMSTANCE contributes more to the financial advancement of the veterinarian than the popularity of the modern horse show, which stimulates the horse owner to possess fine animals and to keep them in the best physical condition. It behooves the veterinarian to encourage them, and, where possible, to take an active part in them.

THE QUARANTINE LINE AND THE OPEN SEASON.—At the recent meeting of the Interstate Association of Sanitary Boards at Wichita, Kansas, which was well attended, the Committee on Line and Open Season, of which Dr. J. C. Norton, of Phoenix, Arizona, is chairman, submitted their report, of which the following are the salient points: "(1) We recommend to the Department of Agriculture that the National Quarantine Line remain the same as last year, with the exception that the counties of Moore and Bledsoe in the State of Tennessee be placed above said line after being examined and recommended by an agent of the Bureau of Animal Industry. (2) We recommend that cattle from below the Federal Quarantine Line be allowed to be moved to points above said Line within the States of Texas and Kansas and the Territory of Oklahoma, between November 1st and December 31st, 1902, and to points within the States of Virginia, North Carolina, Tennessee, and Missouri and the Territories of Arizona and New Mexico, between November 1st, 1902, and January 31st, 1903, under the sanitary regulations provided by these States and Territories and permitted by the local authorities in charge, provided that no such movement of

Southern cattle shall be allowed into any of these States or Territories where proper local regulations are not enforced. (3) All cattle from the Quarantine District, destined to points outside of the States and Territories above named, may be shipped, without inspection, between November 1st, 1902, and January 31st, 1903, inclusive, and without restrictions other than may be enforced by local regulations at point of destination. (4) We recommend that cattle from the two northern tiers of counties in Arkansas be admitted into the State of Missouri by inspection from February 1st to March 31st, 1903."

THE KILLING OF AN ELEPHANT.—Dr. Edward N. Leavy, Veterinarian to the Central Park Zoo, New York, has responded to our request for an official description of the destruction of the elephant "Tom" as follows: "Dangerous 'Tom,' the three-ton elephant at Central Park Zoo, heavily chained by each foot to the floor, was put to death Oct. 2, 1902, by the administration of five 100-grain capsules and eighteen 5-grain capsules of cyanide of potassium, a total of 590 grains, the capsules being hidden in his morning meal of bran mash. The enormous dose given in this instance was simply due to the fact that I wanted to make sure of death in as short a space of time as possible, it being remembered that 30 grains of cyanide administered some years ago to 'Tip,' the park elephant, took several hours to cause death. At just 8.44 the poison was taken, and in eight minutes began to show effect. 'Tom's' ears flapped uneasily, his eyes dilated, his sides shivered in a convulsion and he raised his head and trumpeted. After this he appeared to grow stronger, but only temporarily, as just eleven minutes from the time of taking the poison he had another convulsion, which was more severe than the first. Two minutes later the legs gave way and he toppled over, breaking his right tusk off as he fell. He stood up weakly, swung his head impatiently, trumpeted, shivered ponderously and collapsed. Again he arose and tried to stand. Eighteen minutes had now elapsed, and the poison was working with swifter impetus. 'Tom' could not stand long this time, but tumbled in a heap, struggled to his feet, and for the fourth time went down. Nearly twenty minutes had now passed, but 'Tom,' breathing hard, struggled slowly up again, shook himself and stood erect. Four minutes more and he had his fifth convolution and fall. He lay prone now, and, though he tried hard, could not arise. At 9.09 he had a spasm that was a sign of the end. Sixteen minutes later the death rattle was heard, and

in five minutes 'Tom' was dead. Death took place exactly 56 minutes after taking the dose."

WHAT MIGHT HAVE BEEN.—The will and codicil of Lamont G. Burnham, the retired coal merchant, filed in the Suffolk Probate Office, contains a bequest of \$150,000 to the Boston City Hospital, "to construct and equip upon the hospital grounds a building to be known as the Lamont G. Burnham ward, for such uses and purposes as the Trustees of said hospital shall in their discretion determine." The money was originally a gift to Harvard College, the will being drawn Nov. 1, 1900, but was revoked by a codicil, Dec. 2, 1901, which gave the sum to the City Hospital. It is in the 13th clause of the will that \$150,000 is bequeathed to the President and Fellows of Harvard College, \$100,000 of which is for the purchase of land, conveniently located in the city of Boston, and for the construction and maintenance of a veterinary hospital to be named after him. The balance of the gift, according to the will, was to be used in the establishing of a fund to be known as the "L. G. Burnham Fund," the income of which will be utilized for free clinics for animals. Under the 14th clause of the will the testator provides "in case a veterinary hospital shall be established and a suitable provision be made for the said college for the practice and teaching of veterinary science and medicine prior to my decease—questions which shall be determined finally by my executors—then I give said sum of \$150,000 to the Boston City Hospital." The words as above quoted follow. The codicil revoking the gift to Harvard reads: "Whereas, by the said will, in the thirteenth paragraph, I give to the President and Fellows of Harvard College the sum of \$150,000 for the establishment and maintenance of a veterinary hospital upon certain conditions mentioned therein, I hereby revoke said legacies and bequeath the sum of \$150,000 to the Boston City Hospital for the purposes and conditions named in paragraph 15 of this will." The will was dated Nov. 1, 1900, and the codicil was executed Dec. 2, 1901. The executors are Maria Burnham, W. M. Bunting and W. P. Holcombe of Boston, and H. P. Sprague, of Swampscott. Mr. Burnham's reason for revoking his bequest to Harvard College is not made public, but it is understood that a movement for a veterinary hospital in connection with the medical college having been suggested and discussed developed considerable opposition, and in consequence of this opposition, Mr. Burnham decided to revoke the bequest and give the \$150,000 to the City Hospital.—(*Boston Globe*).

PTOMAINE POISONING.—Alex. Rixa, M. D., of New York, contributes the following to the *Medical Summary*, of May, 1902: "During the past summer I had, perchance, more cases of ptomaine poisoning than in all my previous twenty-nine years of active practice. I presume that the prevalence was greatly due to the extraordinary heat of this summer. Notwithstanding the severity of some of the cases, my patients all recovered. Before entering into a detailed description of some of the most severe cases, a definition of the word 'ptomaine,' with some views of competent authors, will be well placed here. 'Ptomaine,' says V. C. Vaughan, 'may be defined as an organic chemical compound, basic in character and formed by the action of bacteria on nitrogenous matter.' He further states that 'some fish are always poisonous. Others are poisonous, or at least markedly so, only during the spawning season. Still others are subject to epidemic bacterial diseases, and those affected with certain of these diseases furnish flesh that is toxic to man, or, in other words, the bacterial disease is transmitted to man with his food. Lastly, fish, like other kinds of meat, may become infected with saprophytic germs that may harm man.' Schmidt says: 'The poisonous substance is not distributed throughout the animal, but is confined to certain parts. The poisonous portion cannot be distinguished from the non-poisonous, either macroscopically or microscopically.' I treated altogether twelve cases, of which nine were fish, and three lobster poisoning. The best illustration of a severe case of fish poisoning, is the case of William R., a grocer, thirty-two years of age, of robust and good health. He made his lunch of fish (none in the family could give me any information about the class of fish). It was an unusually hot day, in the month of July. He felt no discomfort until after midnight that day, when he was awakened by nausea and griping pain in his bowels. Soon vomiting set in of mucus, colored with bile. When I was summoned, I found the man with cold perspiration pouring down his face. Soon after, fever set in to a temperature of 102; pulse, 140; respiration about 40, shallow and irregular. Pain in the stomach and intestines, with great sensitiveness on pressure. I proceeded to wash his stomach and large intestines, administering right after a dose of five grains of calomel, following it up, the coming morning, with a bottle of citrate of magnesia, for the cleansing of the small intestines. Morning's temperature, 101; pulse, 130; with excessive tenderness to the digestive tract. Second day, temperature the same, pulse more firm;

sensitiveness to stomach and bowels diminished ; having had a number of watery stools during previous day and night. I prescribed an antiseptic intestinal wash, Glycozone, two ounces, hot water, twenty-four ounces, for mornings and evenings. At my evening's call the temperature was 100 ; pulse, 110 ; respiration, 28. Having had some favorable experience with the internal use of Glycozone in acute gastritis, I then prescribed a teaspoonful to be given, diluted with water, every three hours. This treatment was kept up for a week until all unfavorable symptoms disappeared. The other case of serious nature was a lobster poisoning. Mrs. M. S., about twenty-five years of age, was eating a 'fresh' lobster in a first-class restaurant, at night, after a theater performance. She felt some discomfort right after eating it, but thought to counteract it by drinking a big dose of whiskey. She slept all night without disturbance. However, in the morning, when I was summoned, I found her suffering from nausea, vertigo, ringing in the ears, 'like big bells,' as she expressed it, pain in all the joints, and gripping pain in the bowels ; no stool. Temperature, 101.5 ; pulse, 140 ; respiration, 36. The same treatment as above was prescribed, and the woman made a quick recovery. All other cases were treated similarly, with gratifying results. However, taking good advice from my first case, I started with the antiseptic treatment at once, as I don't know of any better remedy to stop vomiting than Glycozone."

THE SOAKING-TUB.—Around the stable a soaking-tub seems to be a necessity, judging from the frequency of its use. It is generally regarded as a valuable adjunct in the treatment of almost all abnormal or diseased conditions of the feet. It is often unclean—often filthy, and in this condition may be responsible for infection of wounds, that would otherwise have remained sterile. If you use the soaking-tub, see that it is clean and well disinfected. Where creolin or any of its many imitations are deemed of insufficient strength for this purpose, formalin will be found effective. A beer, wine or whisky barrel sawed in two, provides this article of stable furniture. Originally clean and presentable, it becomes from use and environment a discolored and grimy object. It is in this latter and ordinarily normal condition that it invariably presents itself, and while on a tour last season and looking over a veterinary establishment equipped and maintained by one of the richest states, on passing through a ward of the hospital my companion—a well known practitioner—exclaimed : "The same old dirty

soaking-tub." It is questionable as to whether the soaking-tub deserves the widespread approbation and patronage which it receives. It has, however, insinuated itself to such an extent into the natures of those connected with horses, that when any lesion of the foot occurs, be it simple or grave, the first impulse on the part of the attendant is, to "put him in the tub," and into the tub he goes. In doing this he is but following an established stable precedent—a custom that is recognized and practiced in the infirmary of the veterinary school with slight improvement over that observed in the stable of the common teamster. Considering the tendency on the part of the profession nowadays, to forsake antiquated customs and traditions, it is not inopportune to suggest that it is high time to dispense with the tub. In the average case, the benefits arising from the foot-bath are extremely doubtful and there is no disputing the fact that much unnecessary misery and often the most cruel suffering, followed by permanent disability, result from its use. The practice of placing a severely lame horse in a bath, oftentimes freely polluted with his own excrement, and tying him for several hours in a constrained position, is neither edifying to the observer nor conducive to the animal's well-being. What practitioner has prescribed the foot-bath in laminitis without observing the horse evince his agony by swaying backwards and forwards, during which motion, the traction of the perforans tendons ensures the drawing downwards of the pedal bones and tends to cause their protrusion through the softened soles! Again, in cases of nail puncture, quarter-cracks, toe-cracks and other forms of pododermatitis where infection is deeply implanted in the foot and consequent great pain results, the horse stands in the tub cross-tied, shackled and quivering and on being released and turned into a bedded stall, he immediately drops, frequently from sheer exhaustion. While opposed to the use of the tub, the writer is not prepared to submit anything novel in the way of a substitute. The object of this short article is, firstly, to direct attention to a practice the recognition of which is reproachful to us as a profession, and, secondly, to insist that local dressings composed of such materials as absorbent cotton, oakum, felt, woolen stuffs, burlap, etc., properly bound to the feet and kept thoroughly wetted, are preferable to tubbing. If beneficial effects accrue from the use of the tub they are directly attributable to one or more of the following agencies:—1, Moisture; 2, Antiseptis; 3, Heat; 4, Cold. As moisture in this case practically means water, it may be argued that

it is a matter of minor consequence as to where that moisture comes from, provided it is sufficient to thoroughly soften the hoof horn. It is not, however, the agent that is objected to, but the manner of administering it. Knowing what we do regarding the hygrometry of the hoof, it can be demonstrated that a felt boot saturated with water, will, say during twelve hours, supply as much moisture as a ten-gallon soaking-tub, and that, too, without inconvenience to the animal. If such is the case, then, the boot is preferable to the tub. Should the condition of the foot demand it, dissolve an antiseptic in the water, then thickly invest the hoof with absorbent cotton dressings, covered with oakum and bandages, and saturate. It is a current belief that antiseptic agents mixed in the water of the soaking-tub, deeply penetrate fistulous tracks and punctured wounds and have a distinctly beneficial effect, by arresting sepsis. Maybe they do, but if so the filth that is so often observed suspended in the bath must necessarily permeate the same openings, so it is debatable as to whether the virtues of the one would counteract the evil effects of the other. In ordinary tubbing, warm water tends to cool rapidly and cold water becomes elevated in temperature, consequently the benefits derived from the one or the other are of a more or less precarious character. Heat or cold, as the case may require, can be applied to the feet in conjunction with the dressings alluded to, and in case where a horse is suffering great pain and persistently assumes the recumbent position, water can be regularly used in this manner without subjecting him to the tortures of the tub. In the successful treatment of the average case of foot trouble, decumbence should be by all means encouraged. Remembering that the feet receive the weight of the entire superstructure and that when irritated from whatever cause, their dependent situation determines an increased blood flow in their direction, everything possible should be done to incite the horse to lie, this being especially the case where more than one foot is involved. With this end in view a roomy stall—a box stall if possible—should be provided, and a deep dry bed given. Plenty of room and plenty of bedding, will tempt any sore-footed horse to lie, and in this position with his feet incased in clean moist dressings, his chances of recovery are not only enhanced, but often assured; and incidentally, were he capable of articulation, his thanks would be expressed for his delivery from "the same old dirty tub."—(Joseph Hughes, M. R. C. V. S., in *Chicago Veterinary College Quarterly Bulletin*.)

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MAX WOCHER & SON (see ad. dept., page 16) have issued a "New Veterinary Catalogue," which is very interesting. It will be mailed to all veterinarians who write them for it at their address in Cincinnati. The reliability of this old firm and of its instruments is its best recommendation.

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Journal

AMERICAN VETERINARY REVIEW.

DECEMBER, 1902.

All communications for publication or in reference thereto should be addressed to Prof. Roscoe R. Bell, Seventh Ave. & Union St., Borough of Brooklyn, New York City.

EDITORIAL.

EUROPEAN CHRONICLES.

ACTINOMYCOSIS.—All our readers are well acquainted with actinomycosis and with all its various manifestations. Existing more or less all over the world, under its name and with its macroscopic and microscopic lesions, its diagnosis has seemed almost always easy ; and, to only mention a few, most of the tumors of the head in cattle, the well-known "wooden tongue," with others, have been classified amongst the forms of actinomycosis—that is, of that affection due to the growth of the streptothrix classified among the actinomyces.

Profs. Lignières and Spitz in an elaborated work just published in the *Bulletin of the Société Centrale de Médecine Vétérinaire*, have shown the errors which have prevailed to this day, and called the attention to another form of disease, which resembles very much antinomycosis, but which differs entirely from it by its microbial cause.

Actinobacillosis is the name they give to the disease, to distinguish it from the actinomycosis of streptothrix nature. Called during the summer of 1900-1901 to investigate an epizooty which prevailed extensively in the Argentine Republic, they observed that, besides the various forms which it presented, affecting as it does the skin, the subcutaneous connective tissue, the lymphatic glands, the salivary glands, the lungs, tongue and pharynx, and presenting in great part almost the typical symptomatology of actinomycosis, actinobacillosis was evidently

a contagious disease, in which contagion was sometimes quite easy, but that the contact of a sick animal with a healthy one was not an indispensable condition of its realization. Contagion, which is due to the introduction in the organism of a microbe, the *actinobacillus*, is found in the pus of the actinobacillary lesions, abscesses or wherever it exists.

The symptoms, the lesions and the characters of the pus, which is characteristic (milky white or slightly greenish, inodorous or having a little albuminous smell, very viscid, thick, paste-like in aspect, sticking to the finger, and never showing yellow or calcareous granulations, except in the lesions of the jaw), all are sufficient to establish the diagnosis, which, however, can be confirmed by examination of the pus under the microscope, when the presence of granulation or of masses of characteristic tufts, are made out. These granulations are simple or compound, formed by one or a certain number of tufts. The tufts are formed of massive clubs, absolutely identical with those of the classic actinomycosis, varying in size, and present the histo-chemical reactions as in that disease. There is, however, an important condition of distinction, namely, that after fixation and coloration with the ordinary aniline color or the method of Gram, filamentous forms are never observed, and that to the point of view of differential diagnosis, it may be said that "the characteristic of *actinobacilosis* is the constant negative result of the coloration by the method of Gram."

The communication of MM. Lignières and Spitz contains most interesting investigations on the microscopic, bacteriologic and experimental study of the microbe, its culture, virulence, toxines, and so forth, and the record of many inoculations made of pure cultures on guinea-pigs, rabbits, birds, rats, mice, dogs, cats, pigs, solipeds, sheep, and cattle, and terminate with the prophylaxy and the treatment, which are very much like those indicated for actinomycosis, iodide of potassium acting as an excellent specific. Immunity and serotherapy have also been considered. A serum has been obtained which has already given satisfactory results.

Fig. 1.



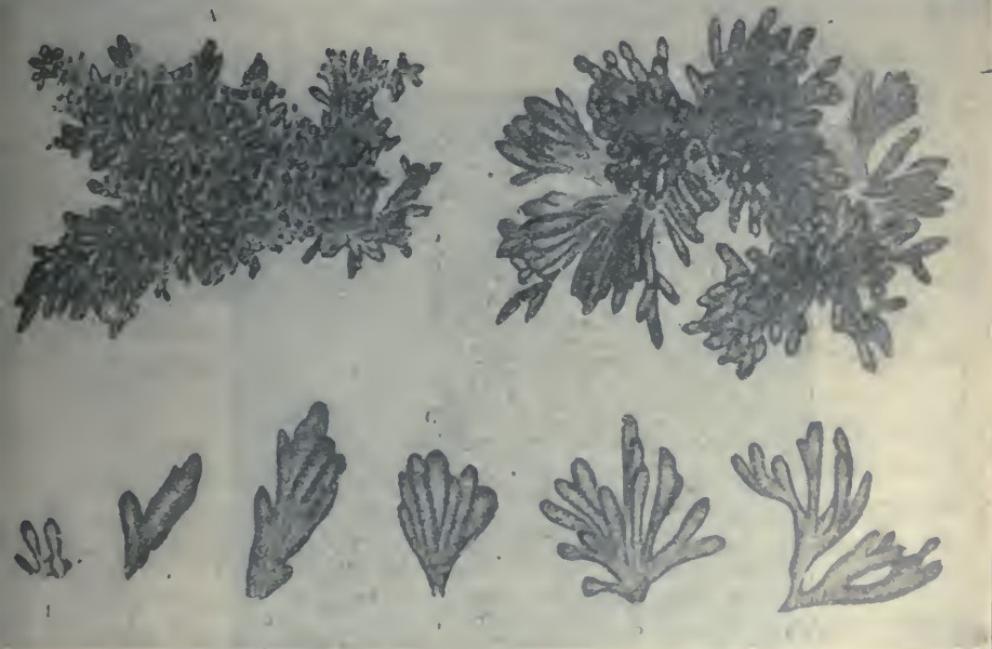
Fig. 2.



FIG. 1. *Actinobacillus*, Cocco-bacillary form Culture on Gelose.

FIG. 2. *Actinobacillus*, Strepto-bacillary form Culture on Bouillon-serum.

B



FRESH PUS. ACTINOBACILLI TUFFS.

a, young tuff, clubs forming. *b*, adult tuff, clubs well-developed.
c, groups of clubs isolated from the tufts.

V98



NATURAL ACTINOBACILLOSIS.
Lesions of the neck, cheek and lip.



EXPERIMENTAL ACTINOBACILLOSIS.
Intra-osseous inoculation.

It may be said that to the point of view of general practice the distinction established by the learned workers of Buenos Ayres is only of comparative importance, but with all that the subject is of the utmost importance and deserves attention. Actinomycosis is quite prevalent in the United States; large outbreaks among our cattle are not impossible; and our veterinarians cannot afford to be unable to recognize whether they have to deal with the classical disease or with actinobacillosis.

I subjoin here two plates showing the bacilli, the tufts, and the aspect of two diseased animals.

* * *

THE BENEFITS OF ANTITETANIC SERUM.—It is well agreed that of all the diseases the animal organism is subject to, tetanus is one of the most serious. Herbivorous animals, and especially solipeds, are more sensitive to it, and few are those that recover from it. So many affected, so many dead, might be said. And on that account the discovery of a serum that prevents its apparition cannot be too much praised, nor the great part played by Prof. Nocard in the vulgarization of its use. Many are the publications that record its efficacy, and to-day it is a well-established truth that by the action of this precious agent attacks of tetanus no longer threaten.

In a recent extract, Prof. Labat, of the Toulouse School, has again showed the benefit that he obtained in his large clinics, and stated the fact that out of seven hundred and six operations which he has performed, many of which were liable to exposure to the tetanic germs, none contracted the disease.

And if these 706 may not be considered as a sufficient statistic, and if ten or a hundred times more are demanded by some as definitely conclusive, it must be, nevertheless, granted that many among them might have great chances to contract the disease. I am afraid that the practice of preventive vaccination is not very favorably or at least sufficiently practiced among American veterinarians, and this is my excuse for writing on the subject, and to give more facts in relation to it.

To be advantageous with certainty, one single injection of antitetanic serum is not sufficient, as observation and experience have demonstrated that if the preventive action is *sure*, it is also only *temporary*, and must be reinforced by successive ones. Two are sufficient—the first as soon as possible after injury or operation, the second eight or ten days later. If cases may occur where only one injection has done well, it is nevertheless always prudent to resort to the second.

The immunization does not act against the bacillus of tetanus, but against its toxine. Tetanus is an intoxication. The bacillus grows with difficulty in the organism. Its toxine acts on the nervous centres. It is taken in by the nervous threads, which are in the tetanogenous focus, and, following the nervous way, reach the centre. Inoculation of the antitetanic serum has for effect to stop or to modify the toxine before it reaches the brain. Inoculation of the serum, even intra-cerebral, remains powerless, if the toxine has touched the nervous element; once touched it cannot be cured.

This is why the injection of serum must be made early, and as its neutralizing influence may be exhausted before the secretion of the toxine is, it is prudent to renew it.

I have said that the nervous elements once touched by the toxine could not be cured, and consequently one can understand, when injected in an animal taken with the disease, why it is powerless to cure. And, yet, cases are quite numerous of recoveries attributed to the use of the antitetanic serum. How can this be explained?

In his article Prof. Labat says: "Acute tetanus cases, with rapid development, are fatal, and the serum powerless against them. Chronic cases which progress slowly seem to be influenced by injections of serum and recovery, if it takes place, occurs more rapidly." What can, then, be the effect of the serum? Its action must not be overlooked. It has the advantage of neutralizing the effects of the toxine which is continually formed at the seat of the traumatic spot. And if the intoxication is not carried to its extreme limits, the sick animal may, through

the serum he has received, be able to resist and gain time to continue the long effort necessary for his recovery. In other words, it is possible that in one case the efforts of the economy will be sufficient to allow him to get out victorious and the animal will recover ; in another the dose of fatal toxine has not been sufficient, arrested as it has been by the serum, and the recovery has been easier. Therefore, injections of antitetanic serum are always indicated ; they may be beneficial, in slow and chronic cases, but never with much great expectation of their effect, as if the toxines developed since the beginning of the injections may be destroyed, there is no certainty that those already produced shall not overcome the efforts of the patient.

To resume, antitetanic serum has an unreliable curative effect, when used in developed tetanus ; it has a positive preventive action ; its use must not be neglected in localities where tetanus is frequent, nor in all wounds dangerous to the point of view of its appearance ; serum must always be injected immediately after the operation, and when in the presence of tetanogenous wounds.

* * *

MANY are the stories that go around among horsemen and veterinarians about the age of horses and the means to detect it ; but, as I heard once said by an old dealer in New York, and as I read again lately in one of the " Causerie " of the *Semaine Vétérinaire* of my friend Pion, there is after all but one certain way to ascertain the age, and that is a certificate of birth. Those, however, are not kept except in some specially well conducted breeding establishments. Nevertheless, we have the teeth, which since the days of Girard seem to answer well all general purposes, and have superseded with much success the number of bones in the tail, the depth of the hollows of the orbit, etc., or even the number of lines teeth might present in their length, which an old German veterinarian, Dr. Brandt, tried to introduce in New York some 35 or 40 years ago. But all that seems to be insufficient, and, again, from Germany, says Pion, another means is brought to light : *the wrinkles of the horse's*

eye. Mother nature does not age all individualities alike, whether man or beast. Advanced old age or lasting resistance to the effects of time are met everywhere. Will a horse raised in misery, which has been licked, overworked, have the upper eyelid more wrinkled than that of another, well fed and having enjoyed a painless life?

But let us not be too severe. Our German colleague says that his method is applicable to horses more than eight years old. After that age, one wrinkle appears every year on the border of the inferior eyelid. Unfortunately the idea is not new and I believe has been known for years; for us, we remember well mentioning it to our students when lecturing on the age of animals; and it was not new then.

The method proves once more that after all there is nothing new under the sun.

A. L.

OTTAWA WINS THE A. V. M. A. CONVENTION
OF 1903.

The hearty invitation extended to the National Association by Dr. J. G. Rutherford on behalf of the veterinarians of Ottawa, Canada, and contiguous territory, to hold its Fortieth Annual Convention at the capital of the Dominion of Canada, has been accepted by the Executive Committee of that organization in the same spirit of fraternal fellowship in which it was offered. The genial Chief Veterinarian of our neighboring country was so forceful and evidently so earnest in the presentation of the claims of Ottawa as a point where much benefit could be bestowed both upon the Association and the profession of that realm, that he had almost won the case when he had finished speaking. Not content, however, with Ottawa's bright chances, he indicted a long letter to the various members of the Association, of which the following is a copy:

OFFICE OF THE CHIEF VETERINARY INSPECTOR,
OTTAWA, ONTARIO, 1st November, 1902.

DEAR SIR:—As you are probably aware, an invitation has been extended to the A. V. M. A. to hold its next annual meeting at Ottawa.

The idea of having the meeting at the Canadian Capital was first introduced by me at the recent meeting in Minneapolis, and has been heartily endorsed, not only by other veterinarians of the city, but by everyone else to whom the matter has been mentioned. The veterinary practitioners at a recent meeting passed the following resolution :—“ That the veterinary practitioners of the city of Ottawa, here assembled, unanimously endorse the invitation extended by Dr. Rutherford to the American Veterinary Medical Association to hold its next annual meeting at Ottawa, and look forward with pleasure to the opportunity which will thus be afforded them of becoming acquainted with the members of that distinguished body and assisting in their entertainment during their visit to the Capital of Canada.”

The Mayor and Council of the City have forwarded to the Executive Committee a cordial invitation to meet here next year, while the officers of the Department of Agriculture are also prepared to do their share in entertaining the members of the Association. Mr. Edwards, M. P., has expressed a desire that the Association should accept his hospitality for one day by going down the river 24 miles to Rockland and inspecting his magnificent herd of Shorthorns, which for a number of years has been conducted on the “ Bang ” system, under the supervision of one of our veterinary officers. Another afternoon can be profitably and pleasantly spent at the Central Experimental Farm, just outside the city limits.

There are numerous other attractions, such as the Parliament Buildings, the Chaudiere Falls, the Parks at Aylmer, Britannia, and Rockcliffe, etc., which ought to make the visit interesting and agreeable, not only to the members, but to the ladies accompanying them.

Apart from all these, however, I may say that I am convinced that great good, not only to the Association, but to the profession generally, and especially to Canadian practitioners, will result from the holding of this meeting at Ottawa. The influx of such a large body of intelligent, highly trained and up-to-date veterinarians cannot fail to arouse widespread and most beneficial interest among the members of the profession throughout the Dominion.

That some such awakening is needed there can be no doubt, and it seems to me that the present is an opportunity which should on no account be neglected. I am satisfied that the membership of the Association will be largely increased by the affiliation of many Canadian veterinarians, who have hitherto looked upon the A. V. M. A. as a foreign body, and not as what it really is, an organization having for its sole object the development and general betterment of the veterinary profession on the North American Continent, regardless of international boundaries or political relations.

In view of all these facts, might I ask you to use your influence with the members of the Executive in favor of the selection of Ottawa, as the next place of meeting? You will all be warmly welcomed.

Hoping to hear from you in the affirmative, I remain,

Yours faithfully,

J. G. RUTHERFORD,

Chief Veterinary Inspector.

Just as the editorial forms of the December REVIEW were closing we received a hurried note from Secretary John J. Repp, writing from Chicago, in response to our request for the earliest information which he could furnish, which contained the following announcement:

"DEAR DR. BELL:—I now have eight (8) out of fifteen (15) votes, all that have been cast thus far, in favor of Ottawa, Can., as the meeting place for the A. V. M. A. in 1903. This practically decides the question in favor of Ottawa."

While the REVIEW has always stood for centrality in the selection of a meeting site, it sees in the selection of Ottawa the opportunity to strengthen its membership by the addition of some of Canada's foremost veterinarians, and, if we may judge by those who have already become members, they are worth going a long way to secure. The Association already has a very cordial invitation to go to St. Louis in 1904, where the great exposition will be in progress; and so it will soon be back into the centre of the veterinary population, stronger and better for having visited "My Lady of the Snows."

PROSPEROUS TIMES FOR VETERINARIANS.

We well remember, six or seven years ago, when the country was in the throes of unprecedented commercial depression, all classes of business stagnant, livestock receiving more than their proportion of the general lassitude, that the profession, as a whole, felt somewhat panicy, and some thought that, like Othello, their occupation was or soon would be gone. Rumors of mechanical contrivances for transportation were rife, and the newspapers added to the general alarm by picturing the horse as destined within a very short period to be useful only as a

museum freak, illustrating a species of mammalia which had occupied from prehistoric times a prominent position in the life of man, the museum lecturer explaining how, only a few decades back, semi-civilized man had utilized the soliped as a beast of burden and even as a source of imaginative pleasure. At the time of which we speak the value of the horse was not great, and when sick or disabled he could more readily be replaced by a new one than to incur the expense and trouble of ministering to his ailments through those skilled in the treatment of his accidents and diseases. Two factors were responsible for his pecuniary degeneration : Lack of demand, through commercial inertia, and over-production.

When members of the veterinary profession became victims of the prevailing hysteria, and began to lose heart in the future of their calling, this journal did what it could to make them view the matter from a rational standpoint. It endeavored to point out the causes which had brought about the deplorable state of practice and prospects, and it maintained with a stout-heartedness which was by some termed "bravado" that when prosperity again settled upon our country, the agriculturist, the stock-raiser, and the veterinarian would participate in the general prosperity to a greater degree than ever before. We even insisted that the profession would be purified and made better through its adversity ; that the mushroom graduates would be eliminated from our ranks, and that the better prepared and worthier men would survive to blaze the way and illuminate the pathway which was being made for a scientific and permanent profession.

It is our belief that the words written in those dark days have been verified to a point that seems almost prophetic. Those who have read the REVIEW carefully can probably call to mind other predictions, based upon logical reasoning, which are being worked out upon the lines suggested by us.

PRESIDENT JAMES LAW, of the New York State Veterinary Medical Society, has appointed as Prosecuting Committee, to

carry out the resolution adopted at the last annual meeting, the following members: Drs. E. B. Ingalls, of Mohawk; H. B. Stebbins, of West Winfield, and William Henry Kelly, of Albany (*ex-officio*). The Committee will at once take steps to establish a fund to enable it to proceed with a vigorous campaign against illegal practitioners, and the REVIEW trusts that the members of the profession in the Empire State will forward their contributions without delay, so that the greatest possible amount of good can be secured through the work of this Committee. The subject was fully gone over in the November issue of this journal, and readers are referred to that number for particulars. We congratulate President Law upon the wisdom of his choice, for he has secured three men whose devotion to their profession and whose conscientious regard for their obligations are beyond reproach, and in whom their brethren may repose their entire confidence.

WE are indebted to Charles E. Gray, M. R. C. V. S., Chief Cattle Inspector for Rhodesia, South Africa (formerly associated in practice with Dr. Wm. Sheppard, of Sheepshead Bay, N. Y.), for a very comprehensive report upon the epizoötic now prevailing among cattle in that country. The disease, which is known there as "redwater," is none other than our own Texas fever, and it has been so extensive as to seriously impair the commercial prosperity of the country. The report sent us contains half-tone illustrations of the cattle while sick, carcasses of those having succumbed, as well as microscopic fields showing the red blood corpuscles studded with the specific organism, the *Pyroplasma bigeminum*, as well as many clinical fever charts. In this connection we tender our thanks to Dr. Sheppard for copies of South African newspapers detailing the ravages of the disease and the Government's efforts at its suppression.

THE VETERINARY COLLEGES of the country, without an exception that we have heard, have larger classes this year than for half a decade.

ORIGINAL ARTICLES.

CONTRIBUTION TO THE STUDY OF CANINE PIRO-
PLASMOSE.

By MM. NOCARD, OF ALFORT, AND MOTAS, OF BUCHAREST.

TRANSLATED BY A. LIAUTARD, M. D., V. M.

(Concluded from page 729.)

BACTERICIDE ACTION OF THE SERUM OF IMMUNIZED ANIMALS.

When *in vitro* one part of virulent blood is mixed with three, four, or five of the serum of a dog recovered from the disease, the mixture can be inoculated with impunity to fresh dogs, even through the veins. These dogs remain healthy and their blood contains no parasites.

Are those dogs thus made refractory to the disease? No. Reinoculated 12-15 days later, with a small dose of virulent blood, they become sick and die as rapidly as the witnesses.

A preventive action of short duration might be expected. Nothing of the kind. If the serum is inoculated in one part and the blood in another, the inoculated dog takes the disease, as well as the witness, even when the serum is injected 12 or 24 hours before the virulent blood. Therefore, it is in reality a microbicide action of the serum.

This action does not take place when the serum has been heated to 56°-57° during half an hour, while, as we shall see further on, preventive serums can be obtained which keep their preventive action after heating to 56°-57° for one hour.

The microbicide action of the serum is observed more accused on dogs highly immunized by repeated injections of the virulent blood.

EXPERIMENTS.—*Dog No. 26*, three months old; inoculated under the skin with a mixture of 50 drops of the serum of dog No. 20 (cured since one month), and 20 drops of virulent blood, after one and one-half hour contact. Examination of the blood made every day, for 11 days, has never shown parasites. At

the test (2 c.c. of virulent blood under the skin) the dog takes the disease, and, like a witness, dies on the fifth day.

Dog No. 68, 15 days old; receives under the skin a mixture of 50 drops of the serum of Dog No. 39 (recovered since six weeks) and 10 drops of virulent blood after one and one-half hour contact. The blood examined during 11 days revealed no parasites. The witness, Dog No. 70, inoculated with 10 drops of the same blood pure, took the disease and died on the sixth day.

Dog No. 77, adult; receives under the skin a mixture of 50 drops of the serum of Dog No. 50 and 20 drops of virulent blood, after one hour contact; its blood examined during 11 days contains no parasites. The witness, No. 83, inoculated under the skin with 10 drops of same blood pure, dies the sixth day.

Dog No. 76, reinoculated with $\frac{1}{2}$ c.c. of virulent blood, takes the disease and dies the seventh day.

Dog No. 90, 15 days; receives under the skin a mixture of 20 drops of virus and 20 of the serum of the hyperimmunized Dog No. 8, after one and one-half hour contact; during 11 days, the blood shows no parasites. The witness, No. 91, is inoculated the same day and in the same way, with a mixture of 1 c.c. of virus and 1 c.c. of prepared serum of sheep; he dies after six days.

Dog No. 124, 15 days; receives under the skin a mixture of 10 drops of virulent blood and 25 drops of reinforced serum from Dog No. 8. Its blood never presented any parasites. The witness, No. 123, inoculated with 10 drops of the same blood, dies the fifth day.

The bactericide action of the serum is surely due to the refractory condition of the dog which has furnished it, as the serum of healthy dogs is not bactericide.

EXPERIMENT.—*Dog No. 101*, 15 days; receives under the skin, a mixture of 50 drops of serum of normal dog with 10 drops of virulent blood after one and one-half hour contact; this dog has haematozoæ already on the fourth day, and dies the fifth after the inoculation.

The bactericide action of the serum does not belong only to dogs recovered from the disease; it can also be observed on animals specifically refractory upon which repeated injections of virulent blood have been made.

A Southdown sheep receives in twelve subcutaneous or intravenous injections, between April 24 and Nov. 9, 1901, 290 c.c. of dog's blood, very rich with parasites. Except weak oscillations in the temperature, occurring in the morning or the evening of the injections, this sheep never exhibited the slightest inconvenience; parasites were never found in its blood. The number of its red corpuscles has not varied in a sensible manner. The serum of this sheep has proved itself clearly bactericide, but at a lesser degree than the serum of recovered dogs, and especially of those where the immunity had been strengthened by repeated injections of virulent blood.

EXPERIMENTS.—*Dog No. 91*, 15 days; receives under the skin a mixture of 1 c.c. of the serum of the prepared sheep, and 1 c.c. of virulent blood after one and one-half hour contact; he dies infected after six days.

Dog No. 66, 15 days; receives under the skin a mixture of 50 drops of serum and 10 of virulent blood, after one hour contact; has not shown any haematozoæ during 13 days. Re inoculated under the skin the fourteenth day with $\frac{1}{2}$ c.c. of virulent blood, he takes the disease and dies the third day.

Dog No. 69, 15 days; receives under the skin of the left thigh 50 drops of serum and under that of the right 10 drops of virulent blood; he takes the disease and dies after six days.

Dog No. 67, 15 days (*witness*); receives under the skin a mixture of 50 drops of serum of *normal* sheep and 10 drops of the same virulent blood; takes the disease and dies the sixth day.

Dog No. 70, 15 days (*witness*); receives under the skin 10 drops of the same virulent blood *pure*; takes the disease and dies the sixth day.

Dog No. 79, 15 days; receives under the skin a mixture of 50 drops of serum of the treated sheep, heated at $56^{\circ}-57^{\circ}$ with

10 drops of virulent blood after two hours contact ; takes the disease and dies the sixth day.

The serum of sheep treated by injections of virulent blood is very haemolytic *in vitro* for the blood of dog ; one might believe that the parasites made free by haemolysis are more easily absorbed by the phagocytes of the inoculated dog. The following experiment shows that it is not so :

Dog No. 68, 15 days ; receives under the skin a mixture of 10 drops of virulent blood with 50 of the serum of a sheep not treated (serum made haemolytic by repeated injections of blood of normal dog). He takes the disease by the fourth day and dies the sixth.

PREVENTIVE ACTION OF THE SERUM OF IMMUNIZED DOGS.

We have shown in the preceding paragraph that the serum of cured dogs is, in small injected doses, unable to prevent or keep back in a noticeable manner the fatal effects of a test inoculation. The experiments below show that, when injected in larger doses, this same serum may retard or even prevent the fatal action of virus inoculated 24 or 48 hours after.

But the preventive action of the serum is much better if it is taken from dogs hyperimmunized with large quantities of virulent blood.

FIRST SERIES—SERUM OF IMMUNIZED DOG.—Dog No. 97, aged 15 days ; receives under the skin 3 c.c. of the serum of Dog No. 8 (which, six months after recovery, has received 30 c.c. of virulent blood) ; 30 hours after, 1 c.c. of virulent blood is inoculated under the skin. Already numerous parasites on the sixth day ; death on the twelfth.

Dog No. 98, same litter ; receives under the skin 5 c.c. of the same serum ; 30 hours after, subcutaneous inoculation of 1 c.c. of virulent blood. On the fifth day, parasites are seen ; death on the eleventh.

Dog No. 99, same litter (witness of the two preceding) ; inoculated under the skin with 1 c.c. of the same virus ; parasites present on the fourth day ; death on the seventh.

Dog No. 94, aged 12 days ; receives under the skin 10 c.c.

of the same serum. After 24 hours is inoculated subcutaneously, at the same time as Dog No. 92, witness, with $\frac{1}{2}$ c.c. of virulent blood. Witness dies the seventh day; the other shows parasites on the eighth only, and dies the thirteenth.

Dog No. 87, 15 days old; receives under the skin $13\frac{1}{2}$ c.c. of same serum; 48 hours after is inoculated subcutaneously, at the same time as a witness, No. 88 (adult), with 1 c.c. of virulent blood. Witness dies the fourteenth day. Dog No. 87 shows for several days a small number of infected corpuscles, briskly phagocytized by big mononuclears; but its temperature remains normal and its general condition satisfactory. Recovery was rapid.

SERUM OF HYPERIMMUNIZED DOG.—In our second and third series of experiments we have used the serum of the same dog, No. 8, whose immunity was strengthened by new injections of virulent blood, forming a total quantity of injected blood of 52 c.c.

This serum was first heated to 56° - 57° for half an hour.

SECOND SERIES.—Dog No. 102, aged 15 days; receives under the skin 5 c.c. of serum. After 24 hours he is inoculated, at the same time as a witness of the same age, with 3 drops of blood very rich in parasites. *The witness dies the sixth day.* No. 102 remains healthy; his blood contains no parasites. Re-inoculated on the nineteenth day with 1 c.c. of virulent blood (in the same time as two witnesses, No. 93 and 110, which die after seven days), he presents on the fifth day a small number of parasites, which are the object of a very brisk phagocytose; but he remains healthy and survives.

Dog. No. 103, of same litter; receives under the skin 3 c.c. of heated serum. After 24 hours, is inoculated with 3 drops of virulent blood (which kills a witness, No. 106, in six days). Its blood examined during 10 days, shows no haematozoa. Re-inoculated the eleventh day with 1 c.c. of virulent blood, he has parasites six days after; for about a week he shows all the signs of the disease—dullness, depressed condition, globular anaemia—nevertheless, parasites are not numerous and the ob-

ject of a brisk phagocytose ; finally the general condition improves and twenty days after the second inoculation he can be considered as cured. The blood did not contain parasites any more.

Dog No. 104, same litter ; receives under the skin 5 c.c. of the same serum. After 24 hours, is inoculated with 5 drops of very virulent blood, 3 drops of which kill a witness, No. 106, in six days. The blood examined daily for 32 days shows no parasites. Reinoculated the thirty-fifth day with 10 drops of virulent blood, which kills witness No. 123 in five days, he escapes the disease after showing only few parasites the tenth day.

Slut No. 105, same litter ; receives under the skin 10 c.c. of the same serum ; 24 hours after, is inoculated with 3 drops of blood, whose virulence has been demonstrated by witness No. 106. Examined during 10 days, its blood shows no parasites. Reinoculated the eleventh day with 1 c.c. of virulent blood, her blood shows few parasites entirely phagocyted on the fifth day ; yet the general condition was gradually going down ; there is progressive anaemia and death occurs the eighteenth day after the second inoculation.

THIRD SERIES.—Dogs No. 119, 120, 122, 15 days old, receive subcutaneously 3 c.c. of serum. After 24 hours No. 119 is inoculated under the skin with 10 drops of very virulent blood. Same inoculation after 48 hours on Dog No. 120.

Dog No. 122 is inoculated only after three days. A fourth dog of the same litter, No. 123, used as witness, dies infected four days after the virulent inoculation.

No. 122 has parasites four days after the inoculation, and dies the seventh day.

No. 119 shows parasites the sixth day, and dies the eighth.

No. 120 dies the ninth day ; he had parasites since 48 hours.

From these experiments the following conclusions can be drawn :

(1) The serum of recovered dogs possesses a clearly preventive action ; but this is weak ; to bring it out, large doses of serum must be injected ; 10 c.c. are not sufficient to prevent

death ; only a short arrest in the development of the disease is obtained (Dog No. 94). Only one of the animals of our experiments has stood the injection of the serum of a recovered dog (No. 87), but he had received $13\frac{1}{2}$ c.c. of serum, an enormous dose for a small pup of 15 days.

(2) If the immunity of the recovered dogs is reinforced by repeated injections of virulent blood, serums are obtained with a preventive power acting on much less elevated doses. All the dogs of the second series resisted, after having received 5 c.c. and even 3 c.c. of serum, to the virulent inoculation, which has killed witness in six days. And yet too large dose of virus cannot be injected. In our third series, all the subjects had received 3 c.c. of the same serum. All three died—with great delay—at the test inoculation ; but 10 drops of a virus, which kills in doses of 1 drop witnesses of the same age, had been inoculated.

(3) The serum keeps its preventive power, when it has been heated to $56^{\circ}-57^{\circ}$, for half an hour.

* * *

Therefore immunity against virulent inoculation, always fatal for witnesses, can be given. But that conferred by serum is of short duration.

The four dogs of our second series had stood the inoculation of virus made 24 hours after the injection of the serum ; they had been reinoculated 11, 19 and 35 days after ; all showed few haematozoæ in their blood ; two remained with all appearances of health ; the two others have been very sick. One, however, got well ; the other died, and curious enough, he had received the largest dose of serum and been reinoculated the earliest, the eleventh day. It is true that this second inoculation has been very severe ; 10 drops of virus fatal for fresh dogs of that age with dose of 1 drop only had been injected.

* * *

We have seen above that the serum of sheep treated with repeated injections of dog's blood very rich in parasites had a clearly marked bactericide action.

The following will show that this serum has only a weak preventive power, secured by only a delay in the evolution of the disease.

Dog No. 137, 15 days old ; receives subcutaneously 20 c.c. of serum of sheep (which has received 290 c.c. of blood very rich in parasites) ; this serum has been heated at 57° for 30 minutes to destroy its haemolytic power. After 24 hours, 10 drops of virulent blood are injected subcutaneously and also to witness *No. 132* of same age. This last has parasites already on the fourth day, and dies the fifth after the inoculation.

No. 137 shows the parasites only the seventh day and dies the ninth.

* * *

The preventive action of a stated serum requires much smaller dose when it is mixed with virulent blood, before making the injection. The serum must be heated first at 57° so as to destroy its microbicide action.—

EXPERIMENT.—*Dog 143*, five days old ; receives under the skin a mixture of 50 drops of the reënforced serum of Dog No. 8 (heated at 57° for half an hour) with 20 drops of infected blood. Examined for 10 days, the blood has never revealed parasites.

Witness Dog 141, of same litter, died five days after receiving 10 drops of the same blood under the skin.

Identical results are obtained when, after the action of the serum upon the diseased corpuscles, they are isolated by repeated turbinations, after washing with physiological water.

EXPERIMENT.—*Dog 130*, 15 days old ; receives under the skin the deposit, obtained after three turbinations and two washings, of a mixture of 50 drops of reënforced serum of Dog No. 8 and 20 drops of parasited blood. Examined during seventeen days, its blood has never shown any parasites.

It seems then that to the contact of the serum of hyperimmunized dogs the parasited corpuscles fix in a strong manner the substance of the serum which leaves them defenceless to the action of the phagocytes.

CURATIVE ACTION OF THE SERUM OF HYPERIMMUNIZED DOGS.

The serum of dogs whose immunity has been increased by repeated injections of virulent blood can act only as a preventive when it is injected before the virulent inoculation. It may also prevent death when injected in strong dose 24 or even 42 hours after a virulent injection, which kills witnesses in five days. It is powerless to delay death when injected after the apparition of the parasites.

EXPERIMENT.—*Dog No. 131*, aged 10 days; receives under the skin, Feb. 14, 8 drops of virulent blood; Feb. 16, 42 hours after, an injection is made under the skin of 20 c.c. of the reinforced serum of Dog No. 8 (which has received, after recovery, 72 c.c. of virulent blood). February 19 he shows very rare parasited corpuscles. The 20th and following days, the parasites are somewhat more numerous; the general condition remains good. The 28th, scarcely a few parasites are observed. March 2, none can be found. The animal is very lively, its weight is almost doubled.

Dog No. 132, 10 days old, witness and brother of the preceding; inoculated February 14 with 8 drops of virulent blood. The fourth day, Feb. 18, its blood contains parasites; 20 c.c. of the serum of Dog No. 8 are injected subcutaneously. He dies the 19th with a large number of parasites in the blood of the heart and of the viscera.

ATTEMPTS AT IMMUNIZATION WITH INJECTION OF OLD OR HEATED BLOOD.

(1) OLD BLOOD.—We have said above that virulent blood, obtained pure and kept cool (in the cellar), away from light, remains virulent for a time which varies between 14 and 25 days, according to season. Could not this blood, having become unable to give the disease, when injected in large dose, confer to them immunity? The two following experiments are not favorable to this supposition:

Dog No. 28, receives under the skin 15 c.c. of blood kept in cellar since fourteen days. When fresh this blood was very

virulent ; inoculated then to Dog No. 21 in 2 c.c. dose ; it killed it in five days.

Dog No. 28 examined carefully during 10 days has never shown the slightest trouble ; its temperature remained normal, its blood never had parasites. Reinoculated subcutaneously with 3 c.c. of virulent blood, he became very sick ; had numerous haematozoæ, but yet recovered.

Dog No. 29, receives in the jugular 15 c.c. of the same blood, 19 days old ; watched during twelve days he shows nothing abnormal, no fever, no parasites. The testing inoculation kills him in six days.

(2) HEATED BLOOD.—We have said above that the parasite is killed with a temperature comparatively not high, 45°.

Perhaps, by measured heating, it might be possible to attenuate its virulence and transform it into vaccine ? This hope was not realized. The following shows that the attenuation of the virus by heating, if not impossible, is at least very difficult to realize.

All these experiments were made on young pups, about three weeks old.

Dog No. 22, receives under the skin 5 c.c. of virulent blood heated at 50° for 30 minutes. Examined during eighteen days, he shows no fever nor parasites. Testing inoculation kills it in 56 hours.

Dog No. 25, receives under the skin 10 c.c. of blood heated at 50° for one and one-half hours. During eighteen days nothing abnormal is detected. Dies in four days after the testing inoculation.

Witness No. 23, receives under the skin 3 c.c. of the same blood not heated ; he takes the disease and dies in five days.

Nos. 44 and 45, inoculated subcutaneously with 3 c.c. of virulent blood, heated at 48° for half an hour.

Nos. 46 and 47, inoculated with 3 c.c. of same blood heated at 45° for half an hour.

These last four dogs remained in good health.

Witness No. 48, inoculated with the same blood not heated, dies in six days.

With the testing inoculation, made the tenth and twenty-third days after, the four dogs above took the disease and died between the fifth and seventh day.

Nos. 56 and 57, inoculated subcutaneously with 2 c.c. of virulent blood heated for half an hour at 43°, die the fifth and eighth day.

Witness No. 58 inoculated under the skin with the same blood, not heated, dies the seventh day.

No. 71 receives 2 $\frac{1}{2}$ c.c. of blood heated at 43° for one hour, dies the sixth day.

No. 72, same blood heated half an hour at 44°, dies the fifth day.

No. 74, same blood heated at 44° for 50 minutes, dies the seventh day.

No. 75, same blood heated at 44° for one hour, dies the ninth day.

Witnesses Nos. 70, 76, 1 c.c. of same blood, not heated, die the fifth and sixth day.

No. 81, 2 c.c. of virulent blood heated at 44° for one and one-half hours.

No. 82, 2 c.c. of same blood heated at 44° for one hour and fifteen minutes.

These two dogs examined for fifteen days have never shown parasites.

Witness No. 83, which had received only 1 c.c. of the same blood, not heated, was dead the sixth day.

No. 82, reinoculated under the skin 15 days after, with 1 c.c. of virulent blood, not heated, dies the sixth day.

TO RESUME.

Virulent blood heated at 45° and above loses all virulence.

Below 44° heated, kept up for more than one hour, seems to have no action on the vitality and virulence of the parasite.

Heated at 44° for 30, 50 minutes or one hour, the blood remains virulent and kills still the small dogs that are inoculated

with it ; but death occurs so much later that the duration of the heating has been longer.

Heating at 44° for one and one-half hours, and even one hour and fifteen minutes, destroyed the virulence.

None of the dogs that resisted the inoculation of heated blood have stood the testing inoculation. With the injected doses, heated blood does not seem able to confer immunity.

ATTEMPTS AT TREATMENT.

All our attempts have failed when applied to the rapid form of canine piroplasmose.

Salts of quinine and arrhena, which give such good results in the treatment of paludism of man, have seemed to be entirely powerless. Whether the treatment was begun before or immediately after the virulent inoculation, the dogs treated have died as certainly and quickly as the witnesses.

We have also treated a few dogs suffering with the slow form ; but as those dogs mostly recover without treatment, it is difficult to define the part played by the treatment in the recoveries that we have obtained. However, it has seemed that the dogs treated by subcutaneous injections of arrhena (2 or 3 milligrams to kilog. of the dog) convalescence has been more rapid.

THE *Colorado Medical Journal* wisely calls attention to one of the dangers from the publication of the views of Professor Koch. Ever ready to seize upon anything favorable to their own advantage, the packers at once began to sell meat known to be tuberculous. Why could not we remember his folly in announcing his cure for consumption, only to the disappointment of sick people all over the world. This was soon forgotten, and we at once adopted his views as uttered before the congress in Germany, only to find that his ideas were erroneous. Professor Pearson, State Veterinarian, once more shows his fallacies when he alluded, at the recent session of veterinarians in Philadelphia, to the fact that we dare not cease to protect our children and all from the dangers of tuberculous meat and milk. In this connection, we may mention the need of some law to assure us clean, whole, unwatered milk.—(*Public Health, Philadelphia, August, 1902.*)

HAEMORRHAGIC SEPTICAEMIA.

BY M. H. REYNOLDS, M. D., V. M., UNIVERSITY OF MINNESOTA, ST. ANTHONY PARK, MINN.

Whether it is proper to speak of this as a disease or as a collection of diseases due to identical or similar germs may possibly be questioned, but for the present at least, and until we have more light on the subject, we may speak of it all as hæmorrhagic septicæmia. This disease is very interesting on account of several peculiarities. It is interesting because of its protean forms; it is interesting because medical treatment so far as we know is absolutely useless and hopeless. We are utterly helpless in the matter of prevention because we have practically no information as to the method of infection or method of spread. Those who have had a chance to study the various outbreaks in Minnesota have been quite unable to trace any connection between one outbreak and another, or to trace a previous history for any given outbreak. It is proving interesting to those members of the veterinary profession who have been so fortunate or unfortunate as to come into contact with it, because of the extreme difficulty of making antemortem diagnoses. In some outbreaks that have been carefully studied, antemortem diagnosis for the first case at least was apparently impossible; but on the other hand there have always been plenty of opportunity for examinations post-mortem, and here the evidence is usually clear.

There is a very practical side to this disease, especially when considered from the farmers' standpoint. It appears suddenly and under all sorts of conditions; a number of animals, usually a large proportion, die, and the disease disappears as suddenly as it came. The owner has lost a certain amount of property, in live stock, without a trace of information as to whence the disease came or how soon the visit may be repeated. The owner would be especially interested in knowing the method of infection and the possible agencies through which his herd may receive a reinfection. If hæmorrhagic septicæmia, like glanders, comes by a specially introduced infection, then he has a certain

proposition to face. If, on the other hand, the microörganism of hæmorrhagic septicæmia, which resembles in all laboratory peculiarities the germs of swine plague, are commonly present in less virulent forms or present under conditions where there is but limited opportunity for their development and the production of disease, then the farmer may expect an outbreak of it at any time and so far as he knows under any conditions, and he has no means of guarding against it—a quite different proposition.

Etiology.—The specific cause of this disease is apparently *Bacillus bovissepticus*, which cannot be distinguished from the bacillus of swine plague by cultural or morphological characteristics. How this microörganism spreads or how it gains entrance into the animal body is not known, but at present we suppose that the entrance may be effected by inoculation; through the respiratory, or the alimentary mucous membrane.

History and development.—The onset is usually sudden and most unexpected, and yet in some recent outbreaks of disease in which the presence of the microörganism was demonstrated, the onset was quite slow and the cases were distinctly chronic. Hæmorrhagic septicæmia is probably more prevalent than is generally supposed, and it is undoubtedly true that a great many outbreaks of this disease have been incorrectly diagnosed as anthrax, symptomatic anthrax, infectious cerebro-spinal meningitis, corn stalk disease, and very possibly as parturient paresis. From reports that have appeared in the veterinary journals at various times it is very evident to those who have had opportunity to study this disease, that outbreaks of hæmorrhagic septicæmia have appeared in a great many different sections of the United States at least, and have been incorrectly diagnosed. Cases which have been described in the East as cerebro-spinal meningitis have been very plainly hæmorrhagic septicæmia, and this is also true of corn stalk disease in the West.

Season and climatic conditions apparently have nothing to do with the prevalence, virulence or disappearance of this dis-

ease. The mortality for the past few years during which it has been studied in Minnesota has been extremely high, the cases all ending abruptly in death, with the exception of a few outbreaks where the cases were chronic. These tended to disturb our supposed information concerning the disease, particularly in reference to its rapid and invariable fatality.

More recently an outbreak appeared under the observation of the writer where all cases gave uniformly clear antemortem symptoms of cerebro-spinal meningitis, and yet examinations post-mortem revealed in addition to the expected lesions of cerebro-spinal meningitis, the characteristic haemorrhages of hæmorrhagic septicæmia, and the organism which is supposed to be the specific cause of the disease was demonstrated beyond reasonable question. (See "University Experimental Farm Outbreak," provisional report of Dr. Wesbrook.) In this outbreak as in all the earlier ones, the mortality was very high, nine animals sickened and nine died.

Symptoms.—The writer has had the privilege of studying closely the development and full history of about twelve cases. The temperatures were uniformly normal or subnormal, except in two cases where the temperature rose rapidly just before death. There was nothing in the nervous disturbances that was especially diagnostic, except that in several cases the skin has been hyper-sensitive. The subjects have usually been disinclined to move about apparently because movement caused pain. In an outbreak which occurred at the University Experimental Farm, and which came under the writer's daily observation, the prominent symptoms in all cases were those of cerebro-spinal meningitis, but it would be very misleading to suggest that these nervous disturbances are characteristic of hæmorrhagic septicæmia. Local lesions which correspond to the tumors of anthrax and symptomatic anthrax are very limited or wanting. The urine in many cases has been scanty or blood stained, and this is also true of the bowel discharges. The examinations post-mortem are very much more definite and satisfactory. The blood is apparently normal. Subcutaneous hæm-

orrhages are common and vary greatly in size and intensity ; in some cases they are large and the hæmorrhagic condition is marked. In other cases the hæmorrhages are punctiform, scattered, and few in number. The hæmorrhages may appear almost anywhere in the subcutaneous tissues, or involve any of the viscera. The spleen is not enlarged, but there may be hæmorrhages on the surface. The hæmorrhages usually have very sharply defined borders and are easily recognized as hæmorrhages. The serous membranes frequently show small hæmorrhagic areas, and the heart especially the auricles are often intensely hæmorrhagic.

We may summarize the symptoms as follows : As a rule the disease appears suddenly ; the case develops very rapidly and terminates fatally. The antemortem symptoms are very unsatisfactory from a diagnostic standpoint. The post-mortem symptoms are definite and as a rule easily recognized and consist of more or less extensive hæmorrhages which are sharply defined when they appear upon the surfaces of the viscera and serous membranes.

Losses in Minnesota.—It is now about two years since this disease was recognized in Minnesota by Dr. Wilson of our State Board of Health Bacteriological Laboratory. During these two years there have been reported to the State Board of Health 80 outbreaks among Minnesota cattle ; these outbreaks involved 52 different farms, appeared in 20 different counties, and resulted in the loss of 551 cattle.

It is safe to assume that a considerable number of other outbreaks appeared but were not reported.

Four outbreaks have come under the writer's personal observation and in three of these the opportunity was unusually good for careful study of the cases from a clinical standpoint.

OUTBREAKS WHICH CAME UNDER DIRECT OBSERVATION.

Johnson Outbreak.

Dr. Wilson and the writer went to North Branch, Chisago County, October 30th, for the purpose of investigating a very

virulent disease that had appeared in a certain herd. The previous history was rather unsatisfactory because indefinite and incomplete. It was learned that five calves belonging to another party had died in a certain pasture earlier in the season, probably in June or July. The history of these cases agreed with the recent cases which we went to investigate, in that the calves had died suddenly; there had been some slight local, diffused swellings, and on skinning, dark red areas were noticed by the owner. Another neighbor had lost suddenly a cow some months before with symptoms and history that agreed closely with those of the present outbreak and the five calves previously mentioned.

Mr. Johnson reported that he had 20 cattle in his herd when the disease first appeared on September 15. A portion of the pasture was dry; another portion quite low and wet, but without timber. None of the cattle had had access to standing corn stalks. He had lost two animals about November 1 (1899), from what he supposed was the same disease. These were calves about six months of age. The owner noticed that in these previous cases the manure was coated with blood or showed bloody streaks. During 1900 one was taken sick and died suddenly in July, another about the middle of October. He had lost also one roan steer calf, seven months old, which died sometime early Monday morning, October 29th, and a red heifer calf about the same age, which died on the same Monday. Both deaths occurred suddenly. The former was noticed to limp some in walking, the trouble being apparently in the left front limb. These two calves were examined post-mortem by Dr. Wilson and the writer on Wednesday, October 31st.

The following parts were examined and all parts were normal except as noted. Parts examined: subcutaneous tissues; mucous membranes; heart; lungs and pleuræ; alimentary tract; bladder; post pharyngeal, mediastinal, bronchial, mesenteric, portal and inguinal lymphatic glands; kidneys; and spinal cord in the anterior cervical region.

Autopsy 1.—A red steer calf in fair condition and about four

months of age, had died about 36 hours prior to our visit. The carcass was moderately bloated, otherwise in fair condition for examination. The skin was discolored in places, especially where denuded of hair. The subcutaneous areolar tissues were emphysematous with fairly well-defined haemorrhages, especially marked at the throat and adjacent portions of the inferior cervical region. The superficial muscles beneath these infiltrated areas were similarly involved. The surfaces of the limbs below the knees, and hocks, did not show haemorrhages as in the cases previously reported by Drs. Wilson and Brimhall. There were no wounds of the skin near the feet that could be detected. Tracheal, oesophageal, and laryngeal mucous membranes show marked inflammation, being dark, swollen and wet.

The kidneys were probably normal at the time of death, but when examined they were soft and showed numerous light yellowish areas about 8 mm. in diameter. The lungs showed a few small, sharply defined hepatized areas, markedly resembling the peculiar lesions of swine plague. The owner had noticed that this calf was quite lame, while sick, and it is interesting to note that in the examination, one of the peculiar areas of haemorrhagic septicæmia was found involving the shoulder muscles. Several articulations showed ulcerations of the articular cartilages, especially the humero-radial and tibio-tarsal. These ulcerations were about 31 mm. long by 12 mm. wide.



FIG. 1.—Ulcerations of Tibio-tarsal Articular Cartilage. Tibia and os calcis. Johnson outbreak, autopsy No. 1.

Autopsy 2.—This was a red heifer calf, 7 or 8 months of

age, in fair condition. The animal had been dead about 48 hours, but showed less post-mortem change than No. 1. So far as superficial parts are concerned the post-mortem findings of No. 1 will apply very closely. This is also true of the lymphatic glands, mucous membranes and kidneys. The dura mater in the anterior cervical region had evidently been the seat of a very active inflammation. The lungs showed the peculiar hepatized areas of swine plague closely resembling those found in No. 1.

Caffrey Outbreak.

The second outbreak studied by the writer in part with Dr. Wilson, occurred near Cokato. My first information came in the following letter :

COKATO, Nov. 26, 1900.

Dr. M. H. Reynolds, St Anthony Park, Minn.:

DEAR DOCTOR :—Mr. Caffrey, living two miles north, lost two cows about three days ago, and a third one is nearly dead now.

The first cow was apparently well at night, and was found dead in the morning. The next day another cow was taken sick and I was called. The second cow was comatose, unable to rise, and died in about twenty-four hours.

Symptoms : This cow was lying on her breast with the head turned to one side as in *parturient paresis*. She was comatose, her respiration stertorous ; temperature 101 ; pulse could not be taken.

Post-mortem : There was cherry-wine colored serum in the abdominal cavity ; the small intestines were very badly inflamed ; the liver was slightly swollen, dark and easily torn ; the spleen was normal in size and a little darker in color than normal. The cephalic lobes of the lungs were inflamed, the heart had a parboiled appearance, and everything indicated a generalized septicæmia.

Both lungs were congested.

This farm is situated at the southwest corner of Cokato Lake. Some of the land is low, some hilly.

These cattle were fed on corn stalks, hay and shorts.

Yours respectfully,

H. A. HELA, M. D. C.

In company with Dr. Wilson the writer reached Mr. Caffrey's place on Nov. 29th. We learned that the Caffrey cattle had been kept in pasture as long as the grass was good, and

were stabled at night. Later in the season they had been fed on wild hay, corn stalks and shorts, the feed being apparently all fresh and good. The pasture in which the cattle had been during the summer and fall contained both high and low ground with some timber and brush. The owner had noticed in those cases which had died before we reached the place, that the head had been drawn far back in some instances, and in others the head was held in the flank as in parturient paresis, these positions being assumed shortly before death. He had noticed no superficial swellings, but said that the animals seemed to have irregular chills. He had also found blood stained areas in all cases on the surfaces of the bodies after skinning. The sick animals had shown complete loss of appetite from the time they were first noticed ill. There had been no swine disease or chicken cholera in the neighborhood during the past season.

The following deaths, 1-6 inclusive, were reported to us by the owner :

Death 1.—A six-year-old cow in fair condition had appeared normal in all respects on the evening of Nov. 22, and was found dead the next morning, the owner not having supposed that the cow was sick. The cow had died in an easy natural position, as though resting. Evidently there had been no struggle.

Death 2.—Another six-year-old cow was found down on Nov. 22, early in the morning, seven o'clock. She was unable to rise, held the head in the flank and died on the evening of the 23d. There was persistent constipation. No superficial tumors.

Death 3.—A spring steer calf, in good condition, was first noticed sick on the evening of Nov. 25. This animal tried repeatedly to rise and failed. Died about 10 A. M., November 26th. Constipation persistent.

Death 4.—This was a four-months-old calf. The owner heard a noise in the stable about 2.00 A. M. on November 27th. He went out to investigate and found the calf jumping into the

manger and shoving the head against the wall. This calf died at 11.00 A. M. with the head drawn far back.

Death 5.—This was a spring calf, supposed to be in perfect health until the morning of Nov. 27 when it was found almost dead. The animal died a little later. Constipation persistent.

Death 6.—An eight-year-old black cow in good condition, was first noticed sick Nov. 28th at 7.00 A. M., and found dead about 10.30 A. M. She dropped suddenly at 7.30, and subsequently tried repeatedly to rise but could not. She lay on the left side with the head in the flank much of the time. Later the cow succeeded in getting on her feet, but fell suddenly with the posterior limbs spread outward and backward, the body dropping suddenly from a standing position to the ground. Later the cow drew up her limbs and lay over on one side in a rather natural position with the head swung backward. She struggled considerably but later died easily and slowly.



FIG. 2.—General View of the Small Intestines. Caffrey outbreak, death No. 6. Showing many small, sharply defined hæmorrhages on peritoneal surface.

Autopsy.—The tissue lesions were rather severe. Both lungs showed considerable interlobular emphysema, which was marked in the ventral lobes. Petechiæ were especially marked on caudal lobes. Right caudal lymphatic gland was dark, swollen and showing petechiæ.

The diaphragm showed scattering petechiæ on peritoneal surface of tendon. The heart was markedly hæmorrhagic, the hæmorrhages being both superficial and deep.

The gall bladder was filled with a dark bloody fluid. Its

walls were infiltrated and œdematosus and the surrounding tissues were œdematosus.

There were petechiæ on the third stomach penetrating the walls. Eighteen inches below the pylorus, the duodenum was œdematosus and bedded in a yellowish gelatinous mass. The small intestines showed well-marked petechiæ throughout. These areas were large and abundant.



FIG. 3.—Section of Small Intestine. Caffrey outbreak, death No. 6. Typical haemorrhages on peritoneal surface.

There were petechiæ in the kidney substance and upon the surfaces. The bladder walls were haemorrhagic, the mucous membrane being very much inflamed, thickened and softened. There was a small quantity of bloody fluid in the bladder. Spleen petechiæ were abundant and especially conspicuous on the inferior extremity.

Death 7.—This was a black and white heifer in fair condition, seven months old. (See Fig. 4.) This animal was first seen by Drs. Wilson and Reynolds at 2.00 P. M., November 29th. The temperature was then 98.6, the calf being out doors on a very chilly day. The respirations were very shallow but normal in frequency. The pulse was not taken. This calf stood with the back arched, shivering and apparently ready to

fall at any minute. The hair was rough; there was a slight filling at the inferior cervical region, and the eyes were sunken. The muzzle was dry.



FIG. 4.—Yearling Heifer. Caffrey outbreak, death No. 7, thirteen hours before death.

At 4.45 P. M. the calf was still out of doors, temperature 100.9; pulse 72, full, soft and fairly strong; respiration 20. The heart and lung sounds were normal so far as could be determined by auscultation.

At 7.30 P. M. the temperature was 101.1, respiration, pulse, etc., about as at 4.45. The calf was now put in the stable out of the wind, but the stable was cold.

At 10.00 P. M. she was lying on the left side with the head resting forward on the ground. The pulse was 54 and much weaker; temperature 99.9, respiration slightly irregular and somewhat jerky. The skin and underlying tissues over the body seemed very sensitive under pressure. This was especially noticeable over the abdomen. The calf had evidently failed rapidly since 7.00 P. M. The head was jerking spasmodically and unconsciously, the spasms affecting especially the cervical muscles. The pupils were dilated, muzzle dry and the neck seemed to be filling slightly at the throat.

At 3.30 A. M. the calf was dead, lying flat on the side in a

rather natural and easy position. There were noted slight rigor mortis, moderate tympanitis and somewhat blood stained faeces. The animal had died as nearly as could be estimated about 2.00 A. M. The respiration had been slightly stertorous from 7.30 P. M. to 10.00 P. M., after which the animal was not seen until found dead.

Autopsy.—There was considerable serum in the abdominal cavity and a small quantity in the pleural cavity. Both lungs were somewhat congested but showed no petechiæ. The trachea contained an abundance of frothy material and the bronchi were moderately injected. The oesophageal mucous membrane was normal. The diaphragm had few small petechiæ on pleural side. The liver showed a few small haemorrhages on the spigelian lobe. There were a few moderate haemorrhages on the heart surface and on the endocardium. The duodenum was in a condition very similar to that described in the post-mortem record of death No. 6. It was involved in a gelatinous mass filled with yellow serum about ten inches from the pyloris. The ileum was injected and the mucous coat showed areas of distinct inflammation. The rectal mucous membrane was very much inflamed. Subcutaneous haemorrhages were present, but small and not well marked. None were noticed on the inferior cervical region or on the lower portion of the limbs. The plainest and most typical haemorrhages were on the liver, as already noted. Both the parietal peritoneum and parietal pleura showed very little that was abnormal.

There was an old wound in the abdominal wall extending into the rumen about one inch in diameter. This injury must have occurred at more than a month prior to this examination. The stomach was adherent around the border of the abdominal wound and the abdominal cavity was thus shut off.

The left humero-radial articulation showed one ulcer involving the articular cartilage about 25 mm. long, oval in shape. The left tarsal articulation showed an oval ulcer about 38 mm. long. The other articulations appeared normal.

Post pharyngeal glands were enlarged, dark and markedly

haemorrhagic. The dura mater was moderately congested with a little serum in the canal at the atlanto-axoid articulation. The bladder was normal and very much distended with normal looking urine.

The tissue lesions in this case were neither extensive nor severe, evidently a case of toxine poisoning.

Death 8.—A red heifer about 18 months old and in good condition, was first noticed sick Nov. 30th, at 7.00 A. M. She had previously been in good health so far as known. When first noticed she was bellowing occasionally and standing apart from the other cattle. She refused her morning feed and was put in the stable about half an hour later. This calf soon went down and did not rise.

At 7.30 the temperature was 99, respiration 22, pulse 14 and good. Respirations were full but somewhat stertorous. The horns were cold. Evidently the circulation was poor. Light colored faeces were passed.

At 10.30 A. M. the temperature was 97.8, having fallen 1.2 degrees during the previous three hours. Respirations were now 24 and markedly stertorous. Pulse could not be counted. The subject was failing rapidly. This case also showed the hyper-sensitive condition of the skin.

At 12 M. the temperature was 97.8, pulse was feeble and could not be counted. The respirations were still stertorous, the expiration being accompanied by spasmodic jerking of the abdominal muscles.

At 2.30 P. M. the temperature was 97, respiration about 24, and the heifer was lying stretched on the side.

At 4 P. M. the temperature was 96, respirations 24; pulse could not be counted. The heifer was groaning with each expiration. The head was very much drawn back and the body still sensitive under pressure. The animal died at 10.30 P. M.

Autopsy.—A hasty post-mortem by the owner discovered what he described as bruised areas under the skin.

Death 9.—A spotted heifer, three years old, was noticed sick on Dec. 2d, at 4.00 P. M. She died at about 5.00 P. M., having

apparently been in the best of health until shortly before she fell dead. No haemorrhagic areas under the skin were noticed by the owner.

Bedor Outbreak.

The third outbreak which came under my observation occurred among the cattle belonging to Mr. John Bedor, living four and one-half miles east of St. Michael's Station. Mr. Bedor had lost one animal on Dec. 1st, and another on Dec. 5th, both dying very suddenly and unexpectedly. These cattle had not been in standing corn. The writer visited Mr. Bedor's place on Dec. 7th, and held examination post-mortem.

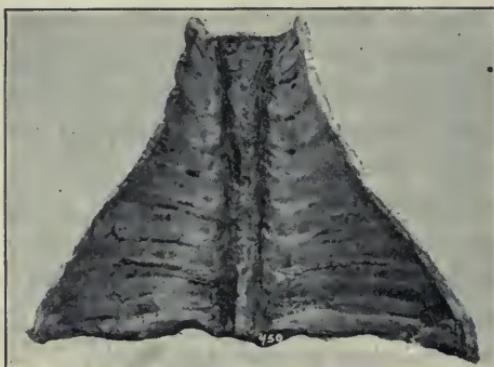


FIG. 5.—Haemorrhages on Costal Pleura. Bedor outbreak, autopsy No. 5, death No. 2.

Autopsy.—Bedor death No. 2. Parts examined : Subcutaneous tissues, trachea, cesophagus, dura and cord, post pharyngeal glands, thoracic cavity and contents, alimentary tract, spleen, liver and portal glands, pancreas, bladder, peritoneum, inguinal glands, humero-radial and carpal articulations. All parts normal except as noted.

There was a circular haemorrhagic area involving the muscles just below the ischial tuberosity. The trachea contained a moderate quantity of frothy fluid. Post pharyngeal glands were dark and haemorrhagic but normal in size. The pleura showed a few small haemorrhagic areas on the diaphragm and a few on the costal pleura, (Fig. 5). The lungs showed in one

cephalic lobe, marked interlobular emphysema, similar to that described in autopsy No. 3 (Caffrey) and in the left caudal numerous haemorrhagic areas. On the endocardium of the right ventricle of the heart, were several fairly well-marked haemorrhages, (Fig. 6). Bronchial and mediastinal glands were not



FIG. 6.—Haemorrhages on Endocardium of Right Ventricle. Bedor outbreak, autopsy No. 5.

carefully examined, but were probably normal. There was one circular haemorrhagic area on third stomach, quite typical. There were a few typical haemorrhages, 5 to 10 mm. in diameter on capsule of liver. Duodenum and rectal mucous membranes were markedly inflamed and swollen.

Mr. Ralph Richner, a near neighbor to Mr. Bedor, reported that he had approximately 20 head of cattle in his herd November 20th. Mr. Richner lost nine, most of the animals dying very suddenly, and the entire nine within a few days after the first case, which appeared on Nov. 20th. His cattle had been fed shocked corn and other dry feed in the yard, and had not been in standing corn stalks at all. On skinning the animals and opening the carcasses, the owner had noticed that the livers

and stomachs were spotted. The intestines were not especially noticed. He would probably not have noticed any petechiae on the intestines, even had they been present. Dark bloody spots were noted under the skin in some cases.

University Experimental Farm Outbreak.

History.—On June 6th, seven cows which had given a normal flow of milk in the morning, gave practically none in the evening. Otherwise the cows were apparently normal.

These cows were all noticed to be slightly ailing the next morning, with the exception of Dell 2. This cow was down and could not be gotten up. The others showed little except dullness. There was no rise of temperature; no evidence of pain or discomfort. When they attempted to walk, the gait was more or less irregular, resembling very much the gait of milk fever in its early stage. This became true of all cases sooner or later, and was of course more marked in some than in others.

There had been nothing new or unusual in the care or feed or other environments of these cattle except that for a few days and nights they had been kept in a pasture which had received some sewage overflow from our filter beds, by reason of recent rains. A salt-box was located near the point where this overflow stood and the cattle unquestionably drank of this water. No other cattle had been in the pasture for ten days.

Symptoms, first period.—The symptoms during the first 24 to 36 hours were not marked except as to continued dullness, staggering gait and cold extremities. The skin was harsh and lacking sensation. This loss of skin sensation began at the posterior extremities and gradually extended forward. The milk flow was completely checked, or practically so in all cases.

Second period.—After 24 to 36 hours, diarrhoea appeared, the discharge being dark and thin with very disagreeable odor. The breath in some cases was noticed to be offensive. Nervous symptoms gradually developed and were very uniform in all cases.

The symptoms during the second period were those which belong to a gradually developing nervous disturbance and were very typical of cerebro-spinal meningitis. The inability to walk naturally was continued, the gait being irregular and weak. The neck was usually bent to one side and the muscles, particularly of the face and neck, were spasmodically contracted. During this period the animals, with the exception of Countess, a large Holstein cow, were still quiet, moving around very little; but the eyes showed a wild, unnatural expression. The skin continued to lose sensation progressively forward. Countess was continually groaning, or rather grunting with each respiration; but not in evident pain. During this second period the animals commenced to chew in a nervous and very persistent manner, with more or less profuse flow of saliva.

It is also to be noted that the temperatures remained normal or subnormal during this period.

Third period.—This was one of intense activity. The eyes continued to grow more wild and unnatural; the grinding of the jaws more active and more constant; the convulsions of face and neck muscles became more intense and then gradually a period of intense restlessness and activity, and death ended the scene in every case.

Post-mortem symptoms.—Several of these animals were examined and the symptoms as seen on examination post-mortem were fairly uniform.

Meningitis involving the spinal cord or brain or both these organs was invariably present. In addition to this there were haemorrhages involving the subcutaneous tissues, and lymphatic glands in various portions of the body; also the pleuræ, pericardium, and surfaces of various internal organs, particularly the lungs and auricles of the heart.

Evidently we had here meningitis; not the specific form of the disease but one probably due to another gerin. The lesions seen on post-mortem are very suggestive of a haemorrhagic septicaemia infection.

Diagnosis.—The veterinarians present, Drs. Lyford, Brimhall,

Annand and Reynolds agreed that the clinical symptoms and the results of examination post-mortem warranted a diagnosis of cerebro-spinal meningitis; but the haemorrhagic conditions made it evident that we did not have the recognized specific type of the disease to deal with. (See Provisional Report on Bacteriological Examination, etc., by Dr. Wesbrook.)

Source of Infection.—Owing to the fact that this particular outbreak occurred in a certain small portion of our herd and did not spread to other cattle on the farm, we were at first inclined to suspect the water in one of our pastures. The affected lot of cattle (our milking dairy cows) had been recently turned into this pasture and a certain small pond had been contaminated by sewage overflow from our filter bed, as already noted. But the fact that a few days later a virulent case of the same disease appeared in a heifer which had not, so far as known, had access to this water but had been kept in an adjoining pasture seemed to weaken this theory. In addition to this, the further fact that an experimental cow which was given this water only, for a period of about two weeks, gave her normal flow of milk and remained in perfect health, seems to disprove the sewage water theory as to source of infection. A careful survey of the history and surrounding conditions leaves us still in the dark except as to the following incident: A sheep died about a year before of typical haemorrhagic septicæmia. It is possible that the infection came remotely from this sheep and that the meningitis was due to germ infection, the germ of haemorrhagic septicæmia being the exciting cause. It should be shown in further explanation that the sheep in question was buried in a field remote, considerably more than a quarter of a mile from the pastures wherein the disease appeared among cattle, although drainage is from this field toward the pastures in question. Other cattle have been kept during the interval in these pastures without harm. We do not know where the sheep received its infection. The cattle may have been infected from the same original source, or possibly there was an indirect infection from the dead sheep; but the latter theory seems very

improbable. The sheep in question developed its disease and died in the sheep barn practically surrounded by other sheep, and yet we had no other cases among sheep at that time and none since.

June 19, 1902.

Dr. M. H. Reynolds, St. Anthony Park, Minn.

DEAR DR. REYNOLDS:—Enclosed please find provisional report on the epizoötic amongst the cattle at the State Experimental Station.

Yours very truly, F. F. WESBROOK, Director.

(To be continued.)

A DISPATCH from Denver, Col., has the following: "The death of a number of horses near Loveland is ascribed to the effects of refuse from the beet sugar factory there. State Veterinarian McCapes received word last night of the death of the animals and is making an investigation into the case. He is of the opinion that the farmers are mistaken."—(*Breeder's Gazette*.)

A STORY comes from Colorado that is peculiar, to say the least of it. It seems that a great many dead horses are being found on the range in that State this fall and the cause of death is said to be the eating of sage brush last winter when feed was very scarce owing to the long-continued drouth. It is stated that the sage brush unless eaten in very large quantities does not kill the horses until the following year. Last winter there was hardly anything but the sage for the horses to eat and they apparently subsisted on it for some time. Now their dead bodies are to be found scattered all over the range. At least that is the substance of the story that comes East from several sources in Colorado.—(*Breeder's Gazette*.)

THE shire hall in the town of Oakham, Rutlandshire, England, was, and is probably now, embellished with a great number of horseshoes which, as the story goes, had been levied from travelers under this ordinance: "If any nobleman or lordship enter precinct as an homage he is to forfeit one of his horse's shoes, unless he redeem it with money." For centuries these shoes have been accumulating, so that the walls of the building were at one time covered with them. They were varied in shape and size, and many were gilt, some of them having been given by monarchs and princes; in fact, it is stated that a Duke of York once paid a silver shoe, such an impost being due from every scion of royalty who rides across that country.

RETAINED AFTERBIRTH IN COWS.

By W. L. WILLIAMS, V. S., PROFESSOR OF SURGERY, NEW YORK STATE VETERINARY COLLEGE, ITHACA, N. Y.

Read before the 12th Annual Meeting of the New York State Veterinary Medical Society, at Brooklyn, Sept. 9 and 10, 1902.

We cannot absolutely define, in point of time, what constitutes retention of the secundines, since what we may deem delayed expulsion in one case, may readily be regarded as perfectly normal in another, although the duration of time elapsing between parturition and expulsion of foetal membranes be the same in each.

A heifer usually expels the foetal envelopes more tardily than the adult cow, and the expulsion of membranes is usually more prompt where the foetus has been carried to full term, than in case of premature birth or abortion.

Retention is therefore a relative term, and signifies a delay in the expulsion of the foetal membranes of such a duration and character as to constitute a menace to the health of the patient. This period is usually reached in from twenty-four to forty-eight hours after calving, but danger may occur earlier, and is not infrequently delayed later.

The symptoms of retention are usually too evident to be mistaken, consisting of the protrusion of portions of the secundines from the vulva, with a variable discharge, and symptoms of local and constitutional disturbances of great diversity, according to conditions.

In some cases there is complete retention, no parts being visible, when the disease may be expressed by vulvo-vaginal discharge, or this may fail, and especially where only a small portion of the membranes remain there may be present only symptoms of septicæmia, and our attention is called to the uterus chiefly through the history of recent parturition without other evidence of disease, and suspicion is set at rest by manual exploration of the genital passages. In rare cases we meet with eversion of the uterus or vagina and with tetanus as complications.

The causes of retention of the foetal membranes will not be fully known until the method of detachment and expulsion is understood. We do not know why birth takes place at a certain time, nor why it should be almost immediately followed or accompanied, or even preceded by expulsion of the foetal membranes. Writers on veterinary obstetrics generally recognize two chief classes of causes for retention—*inflammatory adhesion* of the foetal to the maternal placenta, and *tardy involution* of the uterus.

This first is largely theoretical and not well verified by clinical evidence. The possibility of such a state may well be admitted, but we find no convincing clinical record to such effect. The condition probably occurs but rarely; the cases so termed being, in our judgment, generally errors in diagnosis. The real condition being a *placentitis*, causing tumefaction of the maternal placenta, resulting in incarceration of the tufts of the foetal placentæ, rendering them undetachable.

Tardy involution of the uterus, if not the prevailing cause, is certainly almost a constant condition. But we need not accept the presence of this state as the cause of retention. If we place a pack of gauze in the uterus and retain it there, the organ relaxes, becomes flacid, paretic, and it would seem that the presence of the afterbirth might also exert a retarding influence on uterine involution. In some cases we note further that clinically the involution may be fairly prompt, but a few maternal cotyledons being inflamed incarcerate and firmly retain some of the foetal placenta.

Neither is complete uterine involution essential to expulsion of the secundines, for we not rarely see in delayed labor, the foetal membranes detached in part or wholly, and very rarely even expelled prior to the expulsion of the foetus. It would consequently appear that tardy involution may be rather coincidental or a parallel condition to, rather than a fundamental cause of retained foetal envelopes, and that the real cause may be best sought in a general interruption of uterine functions, which includes involution as one of its most prominent activities.

We might compare these complex uterine functions to those taking place in the alimentary tract during the process of digestion, where muscular contraction of the walls of the digestive tube is constant, but in itself is totally inadequate to digest aliment, certain glandular and other activities being essential parts of the function.

The thought that uterine contraction suffices to detach the foetal membranes might be accepted in some animals, but with the cow we have no knowledge of any muscular elements in the maternal cotyledons, beyond those of the blood vessels, and it is difficult to understand how the contraction of the uterine walls can affect the attachments existing between the maternal cotyledon and the foetal placenta. At times, moreover, the contraction of the uterine walls constitutes the chief cause of the retention.

We feel warranted in concluding from the foregoing observations that uterine involution plays only a subsidiary part in the expulsion of the foetal membranes.

The causes of tardy or incomplete involution along with general derangement of the uterine functions may be very numerous, among the most prominent of which are debility of the patient, exhausting labor, premature labor or abortion, placentitis, metritis, wounds of the uterus, overstretching of uterine walls by hydrops amnii, etc., parturient paresis.

The treatment of retained membranes should be based upon a rational understanding of the causes at work in each given case. For example, in parturient paresis it will usually suffice to pay general attention to the paresis, and upon its yielding the placenta will ordinarily be expelled.

When due to debility of the animal, tonics and stimulants are indicated, while in case of wound, metritis, placentitis, etc., where infection plays the chief rôle, effective means of disinfection are called for, and in fact we might say that the ultimate object of all plans of treatment of retained foetal membranes is to bring about disinfection of the uterus and vagina.

Before these can be undertaken rationally, careful manual

exploration of the uterine cavity is essential. Most writers and practitioners have greatly overdrawn the repulsiveness and dangers of such examination. Properly conducted it is not very disagreeable nor highly dangerous. Before inserting the hand into the uterus with its putrid contents, the organ should be thoroughly flushed out with 5 to 10 or more gallons of a tepid disinfecting solution of, say, 1% of lysol. The operator's hands and arms should be thoroughly disinfected with a carefully selected preparation. Wounds, or abrasions on the hands or arms are always dangerous and are perhaps best guarded by cauterizing the parts, and then saturating the cautery scab with a reliable disinfectant.

Most infections probably occur through the hair follicles and sweat glands, and ordinary disinfectants do not penetrate these. We have been led to conclude by our observations that operators who sweat freely most readily become infected. Two plans for avoiding infection through the hair follicles and sweat glands suggest themselves.

Astringent antiseptics, like permanganate of potash or nitric acid, may tend to constrict or occlude the glandular openings in the skin, or disinfectants having the power of penetrating through sebum, etc., into the cutaneous glands and being deposited therein in a solid state, like an alcoholic solution of corrosive sublimate, the tincture of iodine, etc.

Examination may reveal a variety of conditions, which we may consider in three chief groups.

i. The afterbirth may be wholly detached and merely retained by contraction of the cervix or other mechanical impediment, or may be partly or wholly attached in such a manner as to allow of its ready detachment, the foetal tufts separating easily from the maternal cotyledons, none of the foetal papillæ remaining behind in the cotyledon when mechanical separation is properly attempted. The only handling required is the careful manual detachment of the foetal from the maternal cotyledons, the withdrawal of the secundines from the uterus, and thorough flushing of the uterine cavity with a mild disinfectant solution.

2. The membranes may be firmly attached to the maternal cotyledons and any attempt at separation will result in wounding the maternal cotyledons, with attendant haemorrhages, and great increase of danger of infection, or the tufts or papillæ of the foetal cotyledons break off and remain in the maternal placenta, the latter closing over them, rendering their presence a greater menace in this condition than if the entire membranes had been left undisturbed. In the absence of fever or marked irritation, it is bad surgery to attempt manual removal. It is advisable in such cases to stimulate the uterine functions and delay putrefaction of the membranes.

A great number of drugs have been recommended to be given in such cases. Ergot has been lauded by some: probably more practitioners have favored the use of stimulants and carminatives, such as various vinous distilled and malt liquors, with ginger, fenugrec, anise, fennel, etc., etc. The value of general stimulants and carminatives in favoring expulsion is doubted by few, but the reliance to be placed in these is not equally regarded by various practitioners. Some rely on these almost wholly in nearly all cases. Injections of cold water are favored by some as stimulating uterine contraction. Injections of warm antiseptic solutions in large quantities have proven highly valuable in our hands. They arrest putrefaction of the membranes when used freely twice a day, and hasten the detachment by stimulating normal uterine functions. Internal medication as suggested above may well be combined with this method. Finally when detached treat as under No. 1.

3. Placentitis may occur within a few hours after parturition; the cotyledons are tumefied, much enlarged, firm, and the tufts of the foetal membranes are incarcerated in the maternal cotyledons, and held as if in a vise. These incarcerated foetal papillæ are putrefying, causing septicæmia and high fever. Such conditions brook no delay and call for the most affective disinfection possible. Tearing away the foetal from the maternal cotyledons only adds to the danger, already great; the injection into the uterus of large volumes of disinfectants can ex-

ert but feeble influence on the disease processes going on deep within the enlarged cotyledons. As a rule the cotyledons in these cases can be detached without material haemorrhage, and if so they should all be carefully pinched or twisted off, and the uterus flushed out with disinfectants. Fleming mentions this process as having been done by empirics. It is equally proper and salutary when done by the educated veterinarian. It corresponds in its effects to the curetting of the placenta of women. We must look upon the maternal cotyledon in this case as a vast diseased surface, in contact everywhere with the necrotic, putrefying papillæ of the foetal placenta. If we remove the maternal cotyledon at its neck, we leave a wound area probably less than $1/1000$ of the area of contact between the maternal and foetal cotyledons and in a tissue in a state of health more capable of resisting infection. If we delay action and the animal survive, these cotyledons become necrotic, drop off and are eventually expelled. We have observed the temperature drop 3 or 4 degrees in a few hours after removal of the cotyledons and antiseptic flushing of the uterus. The operation is advised in proper cases only, where the placentæ are enlarged, firm and rapidly becoming necrotic, and accompanied by high fever. We have observed fatal haemorrhages where such an operation was attempted by a charlatan almost immediately after calving where no action was really indicated.

To recapitulate, we meet with three chief conditions calling for as many distinct plans of handling.

A—Cases where the afterbirth is readily or completely detachable, in which it should be removed manually, and the uterus flushed out with antiseptics.

B—Cases where the afterbirth is not detachable without violence, in which cases ecbolics, carminatives, and stimulants, internally, with repeated uterine injections of warm antiseptic solutions are indicated.

C—Placentitis, in which removal of the cotyledons is to be recommended.

In all cases of prolonged manipulation, frequent injections

of large volumes of antiseptics are of the highest importance, modifying greatly the repulsiveness of the operation and reducing to the lowest degree the danger of infection both to operator and patient, facilitating the operation by washing away the debris and by stimulating uterine contractions, which serves to bring the farther parts of the uterus more readily within the operator's reach.

In addition a large volume of antiseptic solution should be kept at hand and the operator should thoroughly wash his hands and arms in this at intervals of a few minutes.

When the work is done, any fetor remaining on the operator's hands and arms is best removed by bathing in a hot solution of permanganate of potash and the stain therefrom removed by washing in a strong solution of oxalic acid. It is needless to say that the clothing to be worn during the operation should be of a character readily sterilized by boiling, and the less worn the better as far as compatible with temperature and environment.

THE *Veterinary Journal* (England) announces in its November number that its publishers will, after this year, reduce the annual subscription to twelve shillings, instead of eighteen shillings, as in the past. It will also inaugurate the unique feature of issuing a "Weekly Bulletin," gratis to readers of the *Journal*, which will contain professional advertisements, practices for sale, practices wanted, assistantships vacant, assistants wanting places, *locum tenentes*, government and service vacancies, etc.

OUR esteemed contemporary, the *Journal of Comparative Medicine*, is rapidly regaining lost ground, occasioned through the indisposition of its editor, it having published two numbers in rapid succession, with promises of the remaining delinquent issues, the September number reaching us on November 20th. Its usual monthly visits were greatly missed by its readers, and we trust that it may soon make its welcome appearance with that regularity which is essential to successful journalism.

AN actress was presented with a tiny watch, the size of a five-cent piece. She went to sleep with the time-piece in her hand. In the morning it was missing. Later, suffering great gastric pain, the X-ray was applied to her body and the watch was discovered in her stomach.

DIFFERENTIAL DIAGNOSIS BETWEEN BURSATTEE, FURUNCULUS AND FARCY.

BY C. C. LYFORD, M. D., V. S., MINNEAPOLIS, MINN.

Read before the 39th Annual Meeting of the American Veterinary Medical Association,
Sept. 2-4, 1902.

I shall not attempt to consider the pathological differences between these diseases, as no satisfactory bacteriological or histological analysis has been completed of either bursattee or furunculus, while with farcy alone has the germ been sufficiently well demonstrated to be considered authoritative, and with which germ you no doubt are all familiar. Drs. Burk and Smith, both of India, have considered bursattee at quite a considerable length, but have not proven their convictions.

I wish more particularly to call your attention to some of the most important facts regarding their external differences, as we meet them in daily practice, so that when once seen they may be easily recognized and a diagnosis arrived at by elimination of one or more of these diseases. I also have for your consideration a clinic, consisting of several well-marked cases of these diseases, which can be seen on Friday morning at the Experimental Station, when a demonstration will be given.

Bursattee is to all appearances (especially at the outset) an epithelial disease, making its appearance on the surface of the body, involving not only the epithelial coverings of the skin, but the mucous membranes as well—generally those externally exposed—such as the organs of the eye and mouth, vulvæ in females and glands and prepuce in males. These organs are rendered more susceptible on account of the moisture which is more or less abundant around these parts. In long standing cases this disease has a tendency to and almost invariably does develop internally, affecting commonly the kidneys and liver, when the hard nodular particles known as “kunker” are to be found.

Bursattee is a warm-weather affection, being very susceptible to cold, heat and moisture. Cold weather retards its devel-

opment and ravages, consequently hastens the healing process. Heat and moisture facilitate the development and spread of this disease, while hot, dry weather is less favorable for its development (even though excessively hot) than when a considerable amount of moisture is present.

During the summer of 1901 I saw fewer well marked cases than in any year prior to this since 1880, the heat being almost unbearable, the moisture limited.

This season has been *exceptionally cool*, with rain storms more severe and often than in previous years, and while bursattee has failed to develop even to the same extent as last year, many cases which have returned regularly on previous summers have failed to make themselves known so far this year, while those which have appeared are less well marked.

I will notice here but one case, which will be presented at the clinic, to show how a rain and a hot day increases the growth and decreases your chance of healing the sore, for the time at least.

No. 1.—Aug. 1st, 1902, was called to see brown gelding belonging to Day Lumber Co. Said gelding was suffering from bursattee, one sore only being apparent, though it was some 14 inches in diameter, located on crest of rump, presenting an angry, red appearance, with the usual grumous discharge mixed with blood, the animal being tied to prevent him biting the part, though he would occasionally throw himself to relieve the itching and drive off the flies. I had an application of one part of tincture of iodine to ten parts of tincture of iron, used on parts three times a day for seven days, when the horse was put to work, the sore having been reduced to 9 inches in diameter. On the 15th of August I saw the case and he was to all appearances doing nicely, though a small sore had appeared under the left eye, being about the size of a filbert. The discharge from this sore followed down the nose, so that on the 20th ult. another sore was noticeable under the nose band, over lower part of nasal bone. About this time it rained for a couple of days, and the previously cool weather was somewhat warmer; the sore

accordingly took on a new growth, and the patient was sent to my infirmary for treatment. Since that time until Aug. 28th the case has done nicely, with little or no discharge, but Aug. 29th and 30th it rained and weather became much warmer, with the usual effect on bursattee sores. Aug. 31st the sore presented a mass of red flesh with slimy discharge,—elevated nodules, varying from one to three inches in diameter, studding the surface of the sore.

Furunculus and Farcy may or may not implicate the skin and mucous membranes, but often the abscesses are located subcutaneously and when broken discharge externally.

Farcy more commonly affects the lymphatic system, consequently may be superficial or deep, varying in depth from the slightest covering to one or more inches. The appearance of farcy buds is generally preceded by an oedematous swelling and pain, and increased temperature. The size of the abscess varies from a pea to several inches in diameter. The discharge is very cohesive, so that when the abscess is punctured the pus escapes like a bleb of cooling glass, carrying a long tail of adhesive pus with it, which soon breaks, and a second follows in like manner. I consider this a very distinctive and reliable characteristic of farcy, and when we have the mallein test to fall back on, there should be no hesitancy in decision—New York City official veterinarians notwithstanding.

Furunculus (carbuncle of the coronary band) makes its appearance as a rule below the fetlock, commonly affecting the coronary band, but it may appear further up the leg. If it starts below it is liable at any time to extend up the leg, inducing a slough of gangrenous nature, of the tissue involved, taking not only the skin, but subcutaneous tissue—even blood vessels, nerves and ligaments, causing open joints, and in some cases loss of the hoof. In more severe cases death may occur within 48 hours from time of its first appearance, either from septicæmia or haemorrhage.

Furunculus is usually ushered in with a chill; temperature varies from 105° to 107° , with symptoms of extreme pain.

The swelling of the parts involved is not often excessive at the outset, but increases as the disease advances, until the skin is completely filled, as in cases of lymphangitis, consequently the foot is generally loosened at the coronary band, and the horny frog is thrown off, even though the disease proper does not involve these tissues. As a consequence, if the hoof is not given the proper care, the entire hoof will be exfoliated, leaving the sensitive laminæ unprotected. The pain is not confined to the tissue involved, for as a rule within 24 to 36 hours the tissues covering the slough are dead, and upon being removed leave a ragged sulcus varying greatly in depth; with the edges of the surrounding tissues extremely sensitive. This, as a rule, is only the beginning of what proves to be a very protracted case, and as other tissues become involved, abscesses commonly appear in adjoining structures, but more often appear higher up the affected leg, and not uncommonly a metastatic swelling appears on the other parts of the body, seldom taking a downward course, as in bursattee. Symptoms of pain are common, such as swaying back and forth in the stall, pawing, striking or kicking with the affected limb. I well remember a case I saw with Dr. McEachran, at Montreal; when we went to make the second visit found the side of the barn had a hole kicked through it, with blood-stained boards, and parts of a broken halter, were all that remained to tell us what to expect of the patient, who was afterwards found nearly a mile from the stable, dead.

The case which I have to present you at the clinic is simply one that has recovered, but still has a thickened leg with numerous scars that might easily be mistaken for the after-effects of farcy. Here again the mallein test proves its usefulness by negative results.

The serious effects of furunculus vary greatly from that of simple disfigurement to death,—or diseases which may or may not be favorable to treatment. Death generally comes from haemorrhage or septic conditions, while quittors, loss of hoof and open joints are the common complications.

Causation.—This is a question that induces a great deal of discussion and comment.

I have noticed many articles in newspapers berating the street car system for salting the tracks to prevent snow and ice freezing to the rails. This really has no argument in fact, as I well remember the spring of 1877 in Montreal, when there was a regular epidemic of furunculus, there being upwards of 250 cases treated at the Veterinary College, and at that time no wheel street cars were run in winter, but in their stead busses on runners, and as a consequence no salt or other substance was used to keep tracks clear.

Treatment.—After several years of trials and tribulations with bursattee sores, with all forms of antiseptic dressings, stypic, caustic, counter-irritant and emollient, I have found but one remedy which I consider really valuable as a curative agent in severe cases. That is a mixture of cantharides and biniodide of mercury blister, repeated every two or three days. To prepare the sore for blister give several applications of tincture of iron just prior to blister. This stops the oozing of the surface, which would otherwise prevent action of blister. In small bursattee sores, when it is possible to remove them by enucleation, good results can sometimes be had.

Furunculus has, so far as I know, no real agent that is infallible, though my best results have been obtained by using tincture of iodine, one part, tincture of iron, five parts, applied directly to the sore, and painting parts surrounding it. I also apply strong tincture of iodine above swelling, in hopes to prevent extension up the affected limb. Internal remedies, such as sulphide and hypo-sulphide of soda, and bicromate of potash, have been given in some cases with apparently good results.

THE Kansas Live Stock Sanitary Board has issued a proclamation setting forth that Texas cattle from south of the fever line may be brought into Kansas between Nov. 1 and Dec. 31, if presented at certain points named and on inspection found free from ticks. Copies of the proclamation may be had on application to Secretary F. H. Chamberlain, Topeka, Kan.

STATISTICS AS TO THE COLOR OF SURRA VICTIMS.

BY COLEMAN NOCKOLDS, M. D., V. S., VET. 1ST U. S. CAVALRY,
BATANGAS, P. I.

In that admirable emergency report on "surra" gotten up by D. E. Salmon, Chief of the Bureau of Animal Industry, Bulletin No. 42, page 97, suggestion No. 3, color is spoken of as a predisposing factor. The following, taken from official records of deaths from this disease in various outfits, may prove interesting.

Date.	Animal.	Sex.	Color.	Age.	Height.	Weight.
Sept. 7, 1901	Mule	Horse	Iron gray	7	15.2 h.h.	1000 lbs.
" 30, "	"	"	Brown	9	15.3 "	1100 "
Oct 3, "	"	"	"	6	15 "	1000 "
" 8, "	"	"	"	9	16.1 "	1200 "
" 14, "	"	Mare	Black	4	15.2 "	1050 "
" 18, "	"	Horse	Bay	9	16.1 "	1300 "
" 20, "	"	Mare	Brown	9	16.1 "	1300 "
" 23, "	"	"	"	11	15.2 "	950 "
" 26, "	"	"	Black	7	15.2 "	1100 "
Nov. 6, "	"	"	Brown	7	15.3 "	1200 "
" 6, "	"	Horse	"	10	15.3 "	1200 "
" 12, "	"	"	Gray	7	15 "	1000 "
" 13, "	"	"	Brown	8	15.3 "	1200 "
" 18, "	"	Mare	"	14	15.3 "	1100 "
" 18, "	"	Horse	Black	9	15.3 "	1100 "
" 19, "	"	"	Dun	25?	15.2 "	1100 "
" 20, "	"	"	Gray	6	14.3 "	950 "
" 24, "	"	Mare	"	7	16 "	1200 "
" 28, "	"	"	Bay	9	16 "	1250 "
Dec. 2, "	"	Horse	Gray	8	15.3 "	1050 "
" 5, "	"	Mare	Bay	6	15 "	950 "
" 11, "	"	Horse	Black	8	15.2 "	1150 "
" 11, "	"	Mare	Gray	6	15.2 "	1100 "
" 12, "	"	Horse	"	9	15 "	1050 "
" 12, "	"	Mare	Black	4	15.3 "	1000 "
" 18, "	"	"	Bay	5	15 "	1000 "
" 20, "	"	"	Brown	9	15.3 "	1050 "
" 21, "	"	"	"	7	15.2 "	1050 "
" 24, "	"	Horse	White	6	15.2 "	1100 "
" 25, "	Horse	Geld.	Gray	7	15 "	1050 "
Jan. 1, 1902	Mule	Mare	Bay	7	14.2 "	1000 "

Of a train of transport animals attached to the Corps of

Engineers which I had veterinary charge of at the time that surra existed amongst them, 30 mules and 1 saddle horse died out of 34, leaving three (3) alive, which consisted of 2 grays and 1 white.

The following is a list given me by Mr. Root, who has charge of the depot corral; during the time that surra was at its worst they were directly under my supervision. Out of 582 horses and mules, those that died from surra were:

Date.	Animal.	Sex.	Hoof No.	Color.	Age.	Height.	Weight.
Aug. 1, 1901	Mule	Horse	23	Gray	6	15.2 h.h.	1000 lbs.
Oct. 5, "	Horse	Geld.	53	"	8	15.3 "	1000 "
" 8, "	Mule	Horse	56	Bay	8	15.2 "	1000 "
" 11, "	"	"	58	Brown	7	15.2 "	1000 "
Nov. 6, "	"	Mare	75	Black	9	15.3 "	1100 "
" 8, "	"	Horse	76	Brown	8	15.2 "	1000 "
" 9, "	"	Mare	78	"	8	15.2 "	1000 "
" 10, "	"	Horse	80	"	9	15.3 "	1100 "
" 14, "	"	"	83	Bay	9	15.3 "	1100 "
" 20, "	"	"	85	Brown	9	15.3 "	1100 "
Dec. 1, "	"	Mare	87	Bay	7	15.3 "	1000 "
" 1, "	"	"	88	"	7	15.2 "	1000 "
" 2, "	"	Horse	89	"	8	15.2 "	1000 "
Jan. 10, 1902	"	Mare	110	Gray	7	15.3 "	1100 "
" 25, "	Mule	Horse	123	Brown	9	15.3 "	1100 "
Feb. 2, "	Horse	Geld.	132	"	9	15.1 "	1000 "
" 2, "	Mule	Mare	134	Gray	8	15.2 "	1100 "
" 15, "	"	"	136	Brown	8	15.1 "	1000 "
" 20, "	"	"	178	"	8	15.1 "	1000 "
Mar. 1, "	"	"	197	"	8	15.1 "	1000 "
July 16, "	Horse	Geld.	286	Black	9	16 "	1100 "

Of the 582 animals in the depot corral 40 were of light color; either gray, iron gray, dun or white (sorrels not counted).

In the quartermaster's corral, 1st Cavalry, the wagon train consisted of 25 horses and 11 mules, of which 1 brown mule died of surra. There were 2 roans and 6 grays in the train.

The pack train numbered 40 mules and 20 horses, of which 1 brown mule died of surra; there were 2 duns and 9 grays in the train.

The following troops of 1st Cavalry averaged 85 animals each, of which 1 gray and 1 bay died from surra:

Troops "A," bays; "B," bays; "C," blacks; "D," grays; "I," light bays; "L," brown; "M," sorrels.

In the quartermaster's corral at Calumba, the following colored animals died of surra, after a number (30 I believe) had been killed on the recommendation of a board sent down from Manila to prevent the spread of glanders. This was before surra had been discovered in Manila.

Animal.	Sex.	Color.	Age.
Mule	Horse	Black	12
"	Mare	Brown	7
"	Horse	Gray	5
"	"	Brown	8
"	Mare	"	8
"	Horse	Gray	8
"	"	Brown	6
"	"	Gray	6
"	"	Brown	8
"	"	Black	6
"	"	Bay	7
"	Mare	Gray	8
"	Horse	Brown	6
"	"	Gray	9
"	"	Buckskin	6
"	"	Bay	4
"	"	Black	7
"	"	Buckskin Zebra	10
"	Mare	Buckskin Zebra	6

In Tannan, a post near Calumba, 13 dark colored and one gray mule and one bay horse died from surra.

The above was furnished by the veterinarian sent to Calumba and Tannan to take charge of the sick animals at these posts.

About the same proportion, both as regards color and numbers, died at many posts near points where 1st Cavalry troops were stationed and which I visited.

It has always been evident that mules are more susceptible to surra than horses; that light-colored animals are attacked

more frequently, in proportion, than dark colored. The same is true of animals that are not provided with shelter at night. It is also quite certain that surra is confined to certain localities; for instance, I believe that no surra has occurred at this post except in cases where the animals were brought in with the disease, as none of the animals that have been permanently here have died from it, although mixing in some instances freely with surra-infected animals. A short distance from here, at and near Santa Cruz, immense numbers have died from surra, in some cases whole troops, 100 per cent. of the animals in a troop. A telegram to the Adjutant-General of this brigade was referred to me this week, which requested permission to destroy 17 of 18 remaining animals of a troop of 9th Cavalry, because they were suffering with surra. It may be that there are not the right kind of flies to distribute surra at certain posts, as it is quite certain that animals at those posts do not take it, even though they sometimes are closely associated with animals from other posts, and which are undoubtedly affected with the disease.

As to whether surra is a native of this country or not, from the conversation of intelligent natives, one of whom has been practicing as a veterinary surgeon at Batangas for twelve years and seems to be pretty well informed, having several very good works on the veterinary art (in Spanish), I gather that surra was unknown to them until about two years ago. They recognize simple œdema and several other diseases likely to be mistaken for surra, but are convinced that surra is a new arrival in these islands.

Surra does not appear to be prevalent in many coast towns. For instance, at Balayan, Taal, Limeray and Buaun, no cases have been seen either among troopers or transport animals, except one horse that was brought to Buaun by an officer from the 5th Cavalry. This horse developed a well-marked case and died, and although for a long time amongst the horses of "K" troop, none of them took it. The 6th Cavalry while stationed at Taal and Limeray, fed dried pea-vine and no green grass, and no surra was observed amongst them while there.

During the fall of 1901 I was commanded by General Sumner to send in a report on surra, and on my advice Lingard's treatment was adopted (Circular No. 2), Headquarters, 3d Separate Brigade, Department of North Philippines. Although I believe some animals did derive benefit from being treated with Fowler's Solution combined with iron and quinine, the cases were few and far between; after an animal was returned to duty often a relapse occurred. Arsenious acid, hypodermic injections of Fowler's Solution, solution of mercuric chloride, potassium iodide and mercuric chloride, and quinine, were all thoroughly tried in turn, but without any brilliant results. The treatment of surra up to the present, has been eminently unsatisfactory. Iron and quinine will cause an animal to pick up for a time; better and quicker than other medications that I have tried. Of course good food and shelter are necessary, or no treatment would be of avail.

"PERMIT me to congratulate you for the splendid manner in which the REVIEW is bringing scientific veterinary literature to the front."—(*J. P. Turner, V. S., Washington, D. C.*)

DR. J. B. PAIGE'S ELECTION TO THE MASSACHUSETTS LEGISLATURE.—Prof. Paige, of Amherst, gets the largest majority of any of the candidates in Hampshire county, only four less than 600. He proved an acceptable candidate, and will be a valuable legislator, as he has the faculty of doing business with his fellow men without any useless words or forms. Few men ever connected with the Agricultural College have so splendidly united the faculty of imparting information to the students and the ability to do the ordinary business of life with ease, speed and economy, as Prof. Paige. He will get better acquainted with the manner of doing business in the legislature in the first three weeks than the average new legislator would in a whole session. In securing legislation favorable to the Agricultural College he can be of little service, as that institution has seemed to be able to get about all it wanted, but as a help to doing the business of the state expeditiously and sensibly he will be a positive force. It needs more men to go to Boston, impressed in advance with the notion that less words, less law, less change, less special legislation is an absolute essential for Massachusetts supremacy as the leader of the states.—(*Hampshire Gazette, Nov. 5.*)

REPORTS OF CASES.

"Careful observation makes a skillful practitioner, but his skill dies with him. By recording his observations, he adds to the knowledge of his profession, and assists by his facts in building up the solid edifice of pathological science."

FRACTURE BY MUSCULAR CONTRACTION.

By T. S. CHILDS, V. S., Saratoga Springs, New York.

I was called to see the race-horse Dr. Hughes, owned by Senator P. H. McCarren and trained by Frank Brown, on August 14th, 1902. I found on my arrival a grand big good looking two-year-old colt, about 16 hands high, and would weigh over 1100. He was hopping around on three legs; could just barely touch the toe of the off fore-foot to the ground.

History.—The horse had been in training all spring and summer, and had always done all that was asked of him, showing great speed, and was in splended physical condition. He was a Futurity candidate, and as a preparatory conditioner he was entered in this race to-day. He was in a good position in his race, and was running strong and with a regular stride, when all at once he stumbled and fell, injuring his rider so badly that it was found necessary to take him to the Saratoga Hospital, where he lay unconscious for several days and then died.

On examination I found a small abrasion on the upper third of the back part of the forearm; just as if struck by the toe of the forefoot of another horse—as if he had been jumped on, but I was assured by Mr. Brown that such could not have been the case, as he had the field-glass on him from the start until he fell, and that there was no horse near enough to him to do so at the time.

Diagnosis.—I made a diagnosis of fracture of the ulnar, in all likelihood due to muscular contraction. The animal was removed to the Saratoga Veterinary Hospital, where he was kept until Sept. 10th, when he was doing very nicely. He did not like to stay in slings, so was let down.

At 2.30 A. M. on the 11th, he became cast, and in getting up he refractured the ulnar. So at 7 o'clock A. M. he was destroyed. I have the ulnar, showing an oblique fracture, involving the articulation to a slight degree.

I may add that this is the first case of fracture due to muscular contraction that has ever come under my personal observation.

STRINGHALT.

By HENRY TWEEDLEY, M. R. C. V. S., Buffalo, N. Y.

In the *Recueil de Médecine Veterinaire*, 1887, I find the following remarks concerning section of the lateral extensor of the phalanges for stringhalt, the reading of which has caused me to add my experience of this operation:

"In certain cases, section of the lateral extensor of the phalanges gives favorable results. Introduced by Boccar, and repeated successfully by Delnart, Bragnier, Palat, and Guittes, this operation does not merit the neglect into which it has fallen. The operation is extremely easy to perform. Having located the position of the tendon, the section is made towards the middle of the distance comprised between its point of junction with the anterior extensor of the phalanges and the bend of the hock. A clean incision of the skin made in the direction of the hair brings the tendon to view; it suffices to raise and cut it above and below at a distance of one to two centimetres. The operation is completed by a suitable dressing. Suture is to be avoided."

Reading the above has induced me to bring forward a case upon which the operation seemed to be completely successful.

The subject, an eight-year-old saddle gelding, was as badly affected with stringhalt as one might see. I was repeatedly asked if I could do anything for him, and, not liking to confess my inability, relying on this operation, I answered in the affirmative; but, being little sanguine of results, I was in no hurry to begin.

Being in the stable one day, I was unable to get out of it, and was forced to try what I could do. I made the incision as above indicated between the bend of the hock and the point where the tendon of the lateral extensor of the phalanges joins the anterior extensor, inserted a curved bistoury and cut the tendon (one incision). I bandaged the wound, and afterwards gave very little attention to the case, as I did not look for any very special result, the operation besides being performed without any special preparation and under disadvantageous circumstances.

To my astonishment, such an improvement occurred that one could scarcely detect any stringhalt, although previously it was an extremely bad case.

At the present day, five years since the operation, the horse is driving every day in the streets of Buffalo practically cured of the stringhalt, at times only a very slight appearance being seen on one limb. No one who reads this can be more surprised

at the result than I was. It certainly is worthy of trial in severe cases of stringhalt, although to my mind it is hard to see from an anatomical specimen how this tendon or muscle can have so much to do in flexing the hock. If in this case section of the tendon did not induce the result then it must have been a case of spontaneous cure.

PROLAPSUS OF THE VAGINA IN BITCHES.*

By ROSCOE R. BELL, D. V. S., Brooklyn, N. Y.

Prolapse of the vagina in bitches is very much more common than the same condition of the uterus; in fact, Georg Muller, in his work "Diseases of the Dog," does not believe that the uterus ever becomes wholly prolapsed. He mentions that one horn may pass out of the vulvar opening, but claims that it would be an anatomical impossibility for both cornuæ to do so. The body of an unimpregnated uterus is a very small organ, it being but a very short chamber from which the horns bifurcate before it assumes much size. The vagina, however, is comparatively large, with flabby, dilatable walls, which in the excitement of oestrus become thickened by congestion, and is easily prolapsed. This is particularly the case with certain breeds, notably the St. Bernard, which is quite apt to become in this condition with the first heat; which, however, usually returns without interference, upon the subsidence of the function, not to again reappear until the next rutting period. It is not so easily gotten rid of the second time. It is larger, and hangs out persistently, becomes crusted and hardened. The mucous membrane loses its soft, delicate appearance and feel, and becomes dry and harsh, and sometimes cracks. The surgeon called in at this time, has the organ fomented with warm antisepsics, lubricated with olive oil, and after some little difficulty returns the enlargement back into the vaginal cavity, straightening out the folds of the membrane, permitting the fingers to remain in position for a varying length of time. Upon releasing pressure, and giving the animal its liberty, he gets his reward by observing the tumor reappear in a short time. He then adopts mechanical means to retain it, and selects one of several methods that suggest themselves. One of the more common ways is to pack the vagina with sponges or gauze and take a couple of stitches in the vulva, allowing them to remain in for 48 to 60 hours, which is sometimes successful, but in the majority of cases the removal of the sutures is a signal for a

* Read before the November Meeting of the Veterinary Medical Association of New York County.

new prolapse. Or the surgeon decides upon simple suturing without the insertion of a retaining pessary, which is less likely to be effective. I have tried the method of inserting a rubber bulb into the body of the uterus, having a tube leading out of the vulva. By dilating the bulb with air and tying the end of the tube which hangs from the vulva the organ would remain *in situ* if the animal would permit it; but she invariably bites off the tube, permitting the air to escape, the bulb to collapse, and prolapsus to occur more readily than if the foreign body were not present. Every other means failing, he at last advises the owner to have the organ amputated, which is more or less successful.

A month or two ago such a case was brought to our attention, and we decided to perform ovariotomy, removing at the same time a large section of the horns, believing that when the attachment of the horns to the broad ligament were severed the remaining stumps and the body of the uterus would fall to the floor of the abdomen, thus dragging back into position the prolapsed vagina, and as the genital excitement would at once subside upon the cessation of oestrus the congestion of the organ would disappear and the walls would shrivel. Upon this hypothesis my assistant, Dr. Shaw, and myself undertook the operation through the left flank, using strict antiseptic measures, but without anaesthetics, it being our experience that more deaths occur in dogs from their use than from the effects of such operations. After drawing the left cornua through the incision it was removed with a small emasculator, the stump returned, and then the right one was treated in a like manner, the incision being closed by two sets of interrupted catgut sutures, one in the abdominal muscles, the other in the skin. The next morning the tumor was shriveled to half its former size, and by the following day it had disappeared, and in four days the patient was virtually well, the wound healing by first intention. The bitch was returned to the owner at the end of one week. I have seen her many times since, and she has never had a return of the trouble and in my judgment never will.

This experience has decided my course in the future, for I have had experience with many such cases, where the prolapsus would become permanent after the second occurrence. It would appear that the removal of the horns, or a portion of them, is preferable to amputation of the uterus, since the weight of the released organ is more conducive to a return of the vagina to its normal portion.

EXTRACTS FROM EXCHANGES.

GERMAN REVIEW.

By ADOLPH EICHHORN, D. V. S., Bureau of Animal Industry, Milwaukee, Wis.

RESULTS IN THE TREATMENT OF TETANUS WITH BRAIN EMULSION [Dr. J. Fiebiger].—Following the results of the experiments of Wassermann and Takaki, by which brain and spinal cord substance in emulsion have a bounding action on tetanus toxins, Schindelka, Reisinger, and the author, have tried the brain emulsion in treating horses affected with tetanus. For preparation of the emulsion, was used at first, the brain of rabbits, later from sheep, which are more susceptible to tetanus. Brain and medulla, mixed with a physiological salt solution, are very finely ground in a mortar, after which the emulsion is filtered through gauze, and squeezed. The injection was made subcutaneously on both sides of the neck, with Paltauf's infusion apparatus. As a rule, a half liter of the emulsion was used. In all, during the time of 15 months, 25 cases of tetanus came under observation, of which 20 were treated with brain emulsion. Of the injected horses, 8 died; those not treated, all succumbed. The total of deaths therefore were $13 = 52\%$, against the usual death rate, which is 80%. In every case search was made for the place of infection, and the same treated with anti-septics. In the same way, special care was taken in nourishing the patient, in case of strong trismus, liquid food (flour gruel, milk with eggs, up to 8 liters a day) was administered with the irrigator. Medicines were not given, except Glauber salt, in cases where there was want of peristalsis. The appearance of abscesses at the place of injection was very troublesome, which in most cases caused considerable disturbance in the general condition of the animals, and prolonged the recovery. The course, in the cases where the injection was applied, generally manifested itself with more marked symptoms in the first few days; gradually they lost in severity, and slowly, after a few weeks, complete recovery took place. Other experiments must prove whether the diminishing of the death rate was due to chance, in the application of the emulsion therapy. By all means, this method of treatment is as successful as other methods applied, is cheaper than the serum therapy, and the material is easier obtainable. This method can also be easily applied in every-day practice.—(Zeitsche. f. Thiermed.)

THE THERAPEUTICAL APPLICATION OF FORMALDEHYD IN SOLID FORM [*F. Glage*].—With the addition of 2-20 volume per cent. of formaldehyd, the colostral milk of cows coagulates to a uniform solid mass; according to the quantity added, the stiffness is brought on in from 10 minutes to 24 hours. The resultant stiffness can be perceived from the fact that by inclining the vessel, the surface of the milk will not remain horizontal. A collection of milk serum does not take place. For the production, only the colostral milk of a few days after birth is suitable. Less than two volume per cent. does not have the effect. The author generally takes 10 per cent. The formaldehyd-colostral milk keeps for at least four years, so far do the observations of the author extend. The mass can be easily broken, at the same time is of such a firmness that with a knife, wide, thin pieces can be sliced off. After removal from the vessel, the mixture is sliced to pieces—as bread, which are then dried until hard. The slices are then grayish, hard, and keep for years. From the slices a powder is easily rasped; this work is disagreeable for the produced formaldehyd gas. Both forms, the dry and the moist preparate, are very adaptable in the treatment of wounds. Especially the moist preparate is of very great value in cases where there is a durable, energetic, and deep disinfection needed.—(*Deutsch. Thier. Wochenschr.*) [Veterinarians in the country ought not to have any difficulty in making this very highly recommended cheap remedy.—(A. E.).]

THE RESORPTION OF FAT AND SOAP IN THE SMALL INTESTINES [*Prof. Dr. Gmeiner*].—The question whether fat before its resorption in the small intestines undergoes chemical processes or solely changes physically and is resorbed as an emulsion, has been recently considerably argued. To decide this question, Gmeiner studied the resorption of fat and soap in the small intestines, under the influence of mustard oil. It was found that the addition of mustard oil checks the resorption of soap solutions, while the resorption of fat emulsion is considerably promoted. Therefore, it is very probable that fat is taken up as such, and before its resorption does not undergo splitting into soap.—(*Zeitschr. f. Thierm.*)

THE RELATION OF PEARL DISEASE (BOVINE TUBERCULOSIS) TO HUMAN TUBERCULOSIS [*Dr. Max. Wolf*].—The autopsy on a man in Leyden's clinic, showed with completely healthy lungs, tubercular nodules of the intestines, and miliary tubercles of the peritoneum and spleen. From the spleen a guinea-pig was in-

culated, which died after eight weeks, of tuberculosis. From this again a calf was inoculated, which did not react to a tuberculin test, and this calf developed pearl disease. Author concludes from this, that he succeeded in proving a case of pearl disease in man. On the other hand, he did not succeed in producing general pearl disease in another calf with the sputum of phthisic persons. In the discussion, Stadelmann remarked that he can conclude from Wolf's results that he only succeeded in transmitting human tuberculosis to an animal. W. replied that R. Koch stated that human tuberculosis is not transmissible to cattle, and by the positive results of the experiments it must be accepted that the described case was *pearl disease transmitted to man*.—(*Therapeut. Mon. hefte.*)

BELGIAN REVIEW.

By Prof. A. LIAUTARD, M. D., V. M.

AVIARY DIPHTHERIA—EXPERIMENTAL STUDY—VACCINATION—SEROTHERAPY [*M. C. Guérin, of Pasteur Institute at Lille*].—Aviary diphtheria has been already the object of numerous investigations, and yet for the author a supplementary study was necessary. Upon the insistence of a distinguished breeder, this study was undertaken, and, although much difficulty was met in obtaining the proper material to make post-mortems and discover the microbic cause of all the trouble, this was, however, finally discovered, viz., a microbe which, in first culture, killed pigeon or fowl, and did not give rise to any effect in second culture, even in very large doses. Among its characters this microbe presents the peculiarity that it does not grow on natural acid potato, consequently cannot belong to the group of *Pasteurella* of Lignières, as it is mobile, nor to that of the *Salmonella*, hog-cholera type. Its best media to grow in is a mixture of fresh peptonized bouillon with horse serum, in the proportion of 8 to 1. A number of experiments made for its general study, and to establish the pathogeny to which it may give rise, have brought the author to the consideration of vaccination, one of the most important of the disease. His experiments seem to have been quite satisfactory, having obtained 15 successes out of 20 on one occasion, 75 out of 77 on another, and promising similar results in one other instance, where 165 chickens were treated. The subject of serotherapy

has also been considered by Mr. Guérin, and from the general consideration of his works he arrives at the following conclusions: 1st. Of all poultry-yard animals, *pigeons* are the most sensitive to aviary diphtheria; in him the virulence of the microbe increases and becomes fixed by successive passages. 2d. Experimental transmission of aviary diphtheria may be easily realized with pigeons, not only by inoculation, but also by injection of virulent products, in which on first plane must be placed the dejections of the sick ones. 3d. A solid active immunity can be conferred to animals liable to the disease by the inoculation of attenuated virus in the peritoneum. Made under the skin, those injections are effective: 4th. An antimicrobic preventive serum of great efficacy can be obtained from horses, which will confer to animals subject to the disease an active immunity by *sero-vaccination*.—(*Annales de Bruxelles.*)

CHRONIC DIAPHRAGMATIC HERNIA IN THE HORSE [H. Zwaenepoel].—Accidental diaphragmatic hernia of the horse has been often described in veterinary publications, but seldom has the diagnosis been made during life. In some cases the animal dies almost instantaneously, in others the symptoms have nothing characteristic, and in others again the ring is so large that death is not imminent or that the presence of the organs in ectopic interferes but little with the respiratory function. Such is the case in chronic hernia, where at first sight the diagnosis seems to be easy, auscultation and percussion permitting of the detection of the presence of the displaced organs. Still it is not always so, and there are cases where the trouble is not made out or even suspected. The case recorded by the author proves it. A horse had colics which were accompanied by such manifestations that his death was expected to soon take place. The next day he seems somewhat relieved; twenty-four hours later there is a return of the same trouble—dull pains, pulse 110, great dullness. Eserine and pilocarpine are given. During the night, fetid diarrhoea sets in, animal tries to take food, some improvement; yet, temperature is 39.7°, pulse 64, respiration accelerated; percussion is very painful; auscultation reveals pneumonia on the left side, no respiration on the right. The next day mætity has subsided on the right, but remains on the left. Gangrene of the lungs is manifested by the fetid breath. For a few days the treatment is continued and the general condition improves. Still the colics were present; the abdomen much retracted; the thoracic mætity re-

mained alternatively uni-or bilateral, but always higher on the left side. Twice borborigmus was detected on the right side. Finally, after being a month under treatment, the horse was destroyed. At the post-mortem the lesions of pneumonia were found in the left lung, the right was sound. An opening through the fleshy portion of the diaphragm, and measuring 30 centimetres in height and 40 in width, had allowed the passage into the thoracic cavity of the stomach, a portion of the duodenum, the spleen, great omentum, with several circumvolutions of the intestines. These were lodged in the right pleural cavity by perforation of the median mediastinum. After reviewing and explaining the various manifestations of his patient, the author, taking all the symptoms into consideration, calls special attention to the borborigmus, the retracted condition of the abdomen, and the excessive soreness of the chest during percussion, which, with auscultation, ought to be repeated before, during and after meals.—(*Annales de Bruxelles*).

PURULENT COLLECTION AND TYMPANITES OF A GUTTURAL POUCH [*M. Conreur*].—An outbreak of distemper occurred among broodmares and colts, and ten of the mares took the disease, recovered and had their colts. None of them took the disease. When weaning time came, one youngster was somewhat sickly; he eat little oats, but drank much milk. Soon he began to roar, and a swelling made its appearance on the right parotid region. This condition rapidly grew worse, and a diagnosis of distemper with abscesses of the retropharyngeal lymphatic gland and swelling of the subglossals. After four days the parotid has increased, and tympanitis is detected by percussion over it. The treatment consisted in puncture of the guttural pouch (method of Dieterichs, viz., incision of the skin and subcutaneous cellular tissue on a level with the inferior third of the wing of the atlas, isolation of the parotid gland, division of the subparotid cellul-o-aponeurotic fascia, which unites the mastoido-humeralis to the sterno-maxillaris, and puncture of the pouch in the angle formed by the external carotid and the occipital artery). The pouch contained fetid gas and concreted pus. The whole was washed with phenic solution. Everything went well, when it was observed that the fluid of the injection thrown into the pouch did not escape through the nose. The Eustachian tube was plugged up. A grooved probe was then introduced into the guttural pouch, directed towards and pushed into the Eustachian tube, which was enlarged with a narrow-bladed bistoury. After this the washing of the cavity went on

perfectly and in a few days recovery was complete.—(*Annales de Bruxelles.*)

INSUFFLATION OF AIR IN THE RECTUM IN SOME FORMS OF COLICS [*M. Hermans*].—Blowing air into a depressed hollow organ has a tendency to make it resume its primitive form, and if it is a tortuous canal, enclosed in a cavity, there is a tendency, for some parts of this canal, to resume their normal relations. The author then thought that this insufflation could be used in some cases of colic, those due to changes of position. He had the occasion to try it with success in a two-months-and-a-half-old colt, which had colic since 36 hours, and resisted saline purgatives and repeated injections. With the hand pump used for bicyclute adapted on the body of an injection syringe, he threw air into the rectum, and when the insufflation was thought sufficient, the animal was exercised. After an hour defecation took place, and the colic ceased. For the author it is evident that this last treatment assisted recovery very much.—(*Annales de Bruxelles.*)

ITALIAN REVIEW.

By Prof. A. LIAUTARD, M. D., V. M.

PATHOLOGIC IMPORTANCE OF THE LARVÆ GASTROPHILE IN THE STOMACH OF HORSES [*Prof. F. Perroncito*].—When these larvæ, yet very small, arrive in the stomach, they introduce in the epithelium of the mucous membrane their mandibles, and by the two mandibular hooks, which develop later on, remain firmly attached to the gastric wall. They ordinarily penetrate the sub-mucous tissue by their cephalic ring, giving rise to the slough of the epithelium and to the formation of a cavity with raised and convex borders. But they may go deeper, as far as the fifth or sixth ring, filling completely the space due to the loss of substance produced by their gradual development. The diameter of the cavity then varies between that of a simple prick to that of a large solution, more or less rounded. The bottom, formed by the sub-mucous tissue, is the seat of an inflammatory process, and the alteration may gradually involve the whole thickness of the stomachal wall. The irritating action of the mandibular hooks and of the little prickles of their rings spreads upon a more or less wide range, even beyond the mucous dermis. When it reaches the first layer of the muscular layer, the connective

tissue proliferates and the wall of the stomach becomes thicker. Some preparations show diffused inflammation between the muscular fibres, which are disassociated, separated. The connective tissue of neoformation presses upon the muscular fibres and gradually atrophies them until complete disappearance. In other points, the connective neof ormations reach even the external muscular layer, which becomes also atrophied, and then all the tissue that forms the bottom of the ulceration is formed of neoplastic tissue, which becomes fibrous, hard and cicatricial. The peritoneum corresponding to these points is also often the seat of a special inflammatory process, which results in villous neof ormations, isolated or not, visible to the naked eye on the external face of the organ. In a portion of the stomach, the wall was changed into a hard surface, which, under the microscope, was found infiltrated with calcareous salts spread in the sub-mucous tissue and the glandular layer as far as the destroyed muscular coat. Horses which carry larvæ of *Gastrophile* are more predisposed to infectious diseases, as the pathogenous microbes can penetrate easily by the numerous wounds or ulcerations due to the presence of the parasites. It has also been remarked that influenza kills many horses affected with *Gastrophilosis*, that typhus counts also many victims in those having the *Gastrophilus intestinalis*, that purulent or fibrinous pneumonias terminate in general fatally, when they probably result of inoculations by the solutions of continuity of the stomach. It may be the same for anthrax.—(*Giornale della R. Acad. de Med. di Torino.*)

RARE CASE OF MEASLES IN DOG [*M. Gambarotta*].—If records are not missing of cases of measles observed in dogs, characterized as in pigs by the presence of the *Cysticercus cellulosæ* in the tissues and particularly muscles, the following is rather rare by the severity and the extent of the infection. The dog presented the symptoms of a nervous affection difficult to diagnose: dullness, stupid appearance, immobility; the head was carried to the left and elevated; there were frequent closing and opening of the left eye; the right lateral biped carried closer to the centre of gravity, hence unsteady equilibrium. In walking the animal moves to the left, in circles. He has shiverings, epileptiform convulsions; the skin becomes less and less sensitive; mastication and deglutition at first difficult, become impossible. The animal dies of starvation. At the autopsy the case was shown to be one of extensive measles. All the muscles of the trunk and of the extremities were stuffed with cys-

ticerci ; they were in the pleura, in the pericardium, in the peritoneum. The heart and other organs were free, with the exception of the brain, which was invaded by a large number of those parasites, some of which were even in the spinal arachnoid.—(*Vet. di Campag. Rev. Vet.*)

A CASE OF OCULAR PARASITES IN A DOG [*Dr. Pietro Ghisleni*].—This interesting case is published as a contribution to the literature on the subject, which seems to be without similar observation. A dog, about seven years old, had received a gunshot wound in the right eye, which, although recovered, left him with deficient sight, there being a large cicatrix on the cornea. This cicatrix was on the lower half of the cornea and oval in shape. The opacity of the cornea was complete at that point, but gradually disappeared towards the circumference. There was anterior synechia, the crystalline lens completely opaque and dislocated forward. The convexity of the cornea was less marked than on the left eye. As there was no chance for treatment, the dog was destroyed. On examination of the eye, when by an incision the cornea was opened, a small quantity of sero-bloody fluid escaped with a small worm, white in color, round in form, measuring 4 mm. in length, and moving actively. Examined by Prof. Andres, it proved to be a larva of *pulex serraticeps*, which is frequent in carnivora.—*Clin. Veter.*)

CLINICAL CONTRIBUTION TO THE ETIOLOGY OF FACIAL PARALYSIS [*Dr. Giovani Gambarotta*].—Facial paralysis is a morbid trouble which, although frequent, has causes at times difficult to make out, and if those may be found of central origin, as recorded by Prof. Bossi, Thomassen, Goubaux and others, they are also frequently of peripheral origin, such as bruises, accidental wounds or traumas of the nerve, pressure by pathologic neoformation on the course of the facial nerve. In relation with this, the author relates two cases where paralysis was due to traumatic influence due to a large buckle of the bridle which had interfered with the action of the nerve in one horse on the left and in another on the right side; and also that of another, which had received a heavy blow from the falling of a wooden bar on the right side of the head. In one case recovery followed the application of a light blister, another submitted to treatment was lost sight of, the third was condemned to be destroyed on account of his emaciated condition.—(*Il Nuovo Ercolani*.)

RADICAL CURE OF VENTRAL AND UMBILICAL HERNIAS IN

COLTS [*Prof. Angelo Baldoni*].—The various modes of treatment resorted to in ventral and umbilical hernias present more or less objection, and, notwithstanding the success which has been obtained with the opening of the sac, reduction of the hernia, resection and sutures of the ring, or, again, the reduction and suture without opening of the sac as in recent hernia, or, again, the closing and support of the ring by the overlapping of the abdominal walls as recommended by Parascandolo; or, again, any other means improved upon by others, accidents and principally the return of the hernia, has often been observed. The author has then decided to resort to the *modus operandi* used at the clinic of the Milan School, which he has modified, and consists in applying upon the base of the sac a strong metallic pin (*slecca*), after this has been pulled out as much as possible, closing the ring well with strong suture and the cutaneous wound sown over it. By this mode of treatment he has obtained the recovery of a large congenital ventral hernia on the median line of the abdomen, of a congenital umbilical hernia, and of a large ventral hernia of the left hypochondriac region. In all of these three cases radical recovery with complete closing of the wound occurred in a comparatively short time, about 30 days.—(*Clinica Veterin.*)

SMALL TUMORS OF FILARIA IN THE ABDOMINAL CAVITY OF BOVINES [*Dr. E. Garino*].—The author has had opportunity in examining the peritoneum of bovines, especially on the posterior face of the diaphragm, small neoformations, flat, of various forms and diameter, which by their aspect and color might at first sight be taken for small tuberculous deposits. But in the majority of cases they were found to contain a filiform body, white, more or less twisted in spirals, surrounded by a tissue of slightly rosy color, a few millimeters in thickness. The superficy of these little growths had a circumvular aspect, which might be compared to that of the brain. In some cases the central little body was not very visible. Varying in number, the tumors, either single or again in numbers, were found on the serous covering of the diaphragm, especially on the muscular portion; sometimes, however, on the aponeurotic, on the costal arch, and in a few instances on the renal capsule. In relation to the frequency of their presence, they have been observed in over 100 animals, in bulls, steers, or cows; they have not been detected in suckling calves. No extensive lesions of the peritoneum were found on their attachment, scarcely a slight alteration of a zone slightly opaque round the neoforma-

tion. Evidently their presence did not give rise to any great disturbance. In examining the filiform white body which was found in most of them, in various shapes, it proved to be a worm of the filaria species, and having succeeded in extracting one complete it was recognized as *Filaria labiato papillosa* (*Filaria Cervina* of Dujardin). Considering the harmless nature of this parasite, Dr. Garino expresses the opinion that these tumors are but a manifestation of one period of life of those animals, and that their encystment is probably only a means of nature to relieve an organism of their presence.—(*Clin. Veterin.*)

CORRESPONDENCE.

CAN ANY READERS SUPPLY THESE NEEDS?

CANCER LABORATORY, UNIVERSITY OF BUFFALO,
BUFFALO, N. Y., Nov. 13, 1902.

Editors American Veterinary Review:

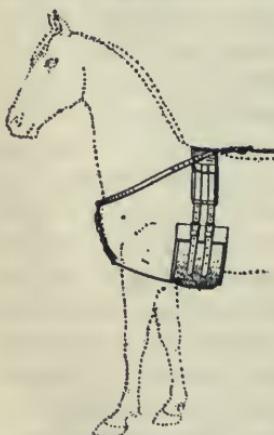
DEAR SIRS:—Could you by any means put us in the way of getting cancerous dogs, cats, or rats, or even a larger animal? We are particularly desirous of getting a cancerous dog.

Yours truly, H. R. GAYLORD.

PAD FOR TREATING SHOE BOILS.—Patent granted September 9, 1902, to Robert H. Musgrave, New York City. This

invention relates particularly to a means for protecting and compressing shoe boils which frequently occur in the fore arms of horses immediately below the shoulders, so that upon the application of proper remedies the boil may be reduced and finally removed. The invention comprises generally a pad or pads, formed comparatively thick, so when placed against the side of the horse's body immediately behind the fore leg, the front portion will lie directly against the shoe boil which provides a protector for the boil when the horse lies down. The pad takes the weight

of the horse and preventing pressure from being applied to the boil and also preventing contact of the hoof and shoe with the boil.—(*Horse-Shoers' Journal*.)



SOCIETY MEETINGS.

PASSAIC COUNTY VETERINARY MEDICAL ASSOCIATION.

The regular monthly meeting of the Passaic County Veterinary Medical Association was held at Dr. William Herbert Lowe's office, corner of Paterson and Van Houten Streets, Paterson, N. J., on Tuesday evening, September 16, 1902, at 8 o'clock, with President Lowe in the chair.

On roll-call the following members answered to their names : Drs. William J. Reagan, John H. DeGraw, William C. Ferguson, T. J. Cooper, Alexander Machan, William H. H. Doty, W. H. Lowe, Jr., M. A. Pierce, William Herbert Lowe, Paterson ; Anthony P. Lubach, Passaic.

The minutes of the last meeting were read by the Secretary, and, on motion of Dr. Cooper, were duly approved.

Upon request of members President Lowe, as delegate to the American Veterinary Medical Association, gave at some length a report of the great veterinary convention held at Minneapolis, Minn., September 2, 3, 4 and 5, 1902.

The President also gave a report of the meeting of the New York State Veterinary Medical Society held in Brooklyn, N. Y., Sept. 9th and 10th, 1902.

Dr. Ferguson, Chairman ; Drs. Doty and Regan, Committee on Constitution, By-Laws and Code of Ethics, presented a report that was concise and comprehensive.

Upon motion of Dr. Pierce, the report was received and its recommendations taken up section by section. With slight amendments the constitution, by-laws and code of ethics were adopted as recommended by the Committee.

Upon motion of Dr. Cooper, it was ordered that the Constitution By-Laws and Code of Ethics be printed.

Upon motion of Dr. Lowe, Jr., the bill of the Guardian Printing and Publishing Company for stationery and printing, amounting to \$9.75, was ordered paid.

Several matters of local interest to the profession were discussed and meeting adjourned at 11 P. M.

The regular monthly meeting of the Passaic County Veterinary Medical Association was held at 169 Paterson Street, Paterson, N. J., on Tuesday evening, October 7, 1902, with Dr. William Herbert Lowe, President, in the chair.

The following members were present: Drs. William J. Reagan, Paterson; John Kehoe, Passaic; T. J. Cooper, Paterson; William J. Fredericks, Delawanna; H. K. Berry, Paterson; M. A. Pierce, Paterson; J. Payne Lowe, Passaic; William Herbert Lowe, Paterson.

Dr. H. K. Berry was chosen Secretary *pro tem.*

The minutes of the previous meeting were read and approved.

Treasurer M. A. Pierce reported that he had received \$16 from Secretary Machan; had paid the Guardian Printing and Publishing Company's bill of \$9.75 for printing, leaving a balance of \$6.25. The Treasurer's report was ordered entered upon the minutes.

President Lowe reported that Dr. Brooks had returned from his vacation and had made application for membership. The President stated that Dr. Brooks stood for the advancement of the profession in every way and was proud of the fact that the movement to organize a local society had the unanimous support of the veterinary practitioners of Passaic county. Dr. Brooks received the unanimous vote of all present, and he was declared a member of the Association.

The President reported that he had ordered a bill of the Guardian Printing and Publishing Company of \$9.75 paid. This bill was for printing the Constitution, By-Laws and Code of Ethics of the Association.

Under Article 9 of the By-Laws the following proposition was presented to the meeting and carried by a unanimous vote:

"In view of the earnest and successful efforts of Senator Wood McKee in the halls of the State Legislature at Trenton last winter, which resulted in the enactment of Chapter 18, Laws of 1902, 'An Act to Regulate the Practice of Veterinary Medicine, Surgery and Dentistry in the State of New Jersey, to License Veterinarians and to Punish Persons Violating the Provisions thereof.'

"Therefore we, members of the Passaic County Veterinary Medical Association, do hereby propose the Hon. Wood McKee for honorary membership in this Association.

"Signed William Herbert Lowe,

"W. J. Reagan,

"William J. Fredericks."

President Lowe declared Senator Wood McKee an honorary member.

Dr. Fredericks moved that the President be authorized to have certificates of membership printed. Carried.

Moved by Dr. Kehoe and seconded by Dr. Cooper that an invitation be extended to the veterinarians of Bergen county to attend our meetings. Carried.

The members listened with much interest to the reading of an excellent paper on professional etiquette by Dr. J. Payne Lowe, of Passaic.* Dr. Lowe's paper was received, discussed and ordered placed on file.

A vote of thanks was extended to the Doctor for the care he had exercised in the preparation of his paper.

Dr. Cooper was appointed essayist for the next meeting, his subject being "The Transmission of Disease Through Milk."

Meeting adjourned at 10.45 P. M.

The regular monthly meeting of the Passaic County Veterinary Medical Association was held at 169 Paterson Street, Paterson, N. J., on Tuesday evening, November 4, 1902, with Dr. William Herbert Lowe, President, in the chair, and Dr. Alexander Machan, Secretary.

Notwithstanding the fact that it was election night there was a quorum in attendance, the following practitioners being present: Drs. T. J. Cooper, David Machan, Alexander Machan, John H. DeGraw, W. H. Lowe, Jr., William Herbert Lowe, Paterson; J. Payne Lowe, Passaic.

The minutes of October 7th were read and approved.

Under "unfinished" business the President reported that he had ordered certificates of membership, which would be ready in the course of a few days.

Secretary A. Machan reported that he had up to date made two payments to Treasurer M. A. Pierce, the first amount being \$16 and the second \$10, making a total of \$26, paid over to the Treasurer. The Secretary further reported that he had \$2 in hand just paid him by one of the members and that all members had paid their dues for this year except four, who were not present when he was collecting dues. Dr. Machan also reported that he had sent invitations to Bergen county practitioners as instructed by the Association at the last meeting. The Secretary's report was received and ordered entered upon the minutes.

Treasurer M. A. Pierce not being present, there was no report from that officer.

President Lowe announced that he had had some correspondence with the State Board of Health as to whether veterinarians could have the use of the State Bacteriological Labora-

* Published in November REVIEW.

tory at Trenton, for diagnostic purposes, and he was pleased to be able to give a favorable report, and he hoped that veterinarians would avail themselves of the services of the State Laboratory. Dr. Lowe stated that the work at the State Laboratory is conducted free of charge and that it consists in examinations for diagnosis in the various affections which are produced by micro-organisms. Communicable diseases of whatever character are investigated, and a diagnosis is made when possible. Investigations of a private nature will not be undertaken at the laboratory, and veterinarians are requested not to send sections of tumors, etc., to the laboratory, as no examinations will be made of such substances, the work of the laboratory being wholly devoted to the public health interests of the State. Inquiries will be made into the character and purity of the animal products in use in this State for prophylactic and remedial purposes, and also concerning the causes of wholesale poisoning due to unwholesome food, and into the germicidal value of the various substances employed in sanitary operations. Specimens of tissues suspected to be affected with rabies, anthrax, glanders and other diseases peculiar to the lower animals can be forwarded in the manner described in Circular 105 of the State Board of Health, issued August, 1902. The ordinary mailing cases for the other diseases named in the said circular can be obtained in Paterson at the office of the Board of Health, or at the drug store of Gurdon E. Pellett, corner of Park Avenue and Carroll Street. Dr. Lowe mentioned that Dr. Cooper had already availed himself of the use of the State Laboratory by taking a portion of the brain of a horse supposed to have hydrophobia to Trenton for diagnostic purposes, and Dr. Cooper explained why in this case he expected the result would be negative.

The President stated that he had not been able to attend the annual meeting of the New Jersey Sanitary Association at Lakewood, October 24th and 25th, and make the report of the Committee on Animal Diseases and Animal Foods of that organization, of which committee he is chairman.

Dr. Cooper brought up his blacklist proposition again, and on motion of Dr. Alexander Machan, it was laid over until the next meeting.

Dr. Pope telephoned his regrets at not being able to be present.

Dr. William C. Berry, formerly of Bloomingdale, now of Haskell, wrote a letter showing his deep interest in the Association.

Dr. Cooper, who had been appointed essayist for the meeting, read an excellent paper on "Milk as a Conveyer of Disease." The subject being an important one, it was fully discussed. Dr. Machan moved that a vote of thanks be given Dr. Cooper, and that his paper be sent to the REVIEW and to the Journal for publication. Carried.

The President appointed Mr. David Machan essayist for the December meeting, subject "Examination of Horses for Soundness."

On motion meeting adjourned at 10 P. M.

A. MACHAN, *Secretary.*

VETERINARY MEDICAL ASSOCIATION OF NEW YORK COUNTY.

The November meeting of this association was called to order on Wednesday evening, Nov. 5, at 8.30, by President Ellis. As Dr. Clayton, the Secretary, was unavoidably absent, Dr. Bell was asked to act in his stead. There were present Drs. Amling, Bowers, O'Shea, Ryder, McCully, Robertson, Schroeder, Keller, Bell, Ellis, Cattanach, Hayes, Fink, and a large number of the students of the New York-American Veterinary College.

Dr. Roscoe R. Bell presented a case report entitled, "Prolapsus of the Vagina in Bitches." * It had reference to the reduction of this condition by removing a portion of the uterine horns and the ovaries, the uterus and stumps of the cornua dropping to the floor of the abdomen, which would retract the protruding organ. It was thoroughly discussed by Drs. Ellis, Ryder, Robertson, Bowers and others, the discussion including the consideration of prolapsus in other domestic animals.

Dr. James L. Robertson then brought forward a case which he had seen a day or two previously. It was that of a horse suffering with congestion of the lungs, and having the unusual symptom of hyperesthesia of the left side, the animal continually biting at that part of its body.

He also spoke of the great prevalence of glanders in New York City, and indulged in some remarks relative to the attitude of the Board of Health with regard to contagious diseases of animals. The discussion of this subject was very general and animated, Drs. Keller, Ryder, Bowers, Cattanach, Ellis, and Bell taking part. Dr. Keller exhibited postal cards which the

* Published elsewhere in this number of the REVIEW.

Health Board supplies to veterinarians, making it very easy and convenient for them to report all cases.

The meeting adjourned at about 11 o'clock.

WISCONSIN SOCIETY OF VETERINARY GRADUATES.

Met at the Kirby House, Milwaukee, Sept. 11, 1902, at 7.30 P. M., and was called to order by the President, and the following members answered to roll-call: S. Beattie, H. P. Clute, C. M. Crane, C. E. Evans, H. F. Eckert, R. S. Heer, J. T. Hernsheim, E. L. Morgenroth, J. T. Roub and S. S. Snyder. Visitors present—Drs. W. T. Schwiesum and T. A. Schneekloth. The minutes of the last meeting were read and approved.

The President re-appointed Dr. H. P. Clute on Committee of Legislation, as his term had expired.

The Revisionary Committee came under discussion and was dismissed by the Chair.

Dr. Clute on behalf of Mrs. Stater and Ormond extended thanks to the Society for their kind remembrance of the late Dr. C. H. Ormond.

Dr. Eckert reported some very interesting experiences with rabies, in which there were six persons infected, all taking the Pasteur treatment successfully.

Applicants for membership were taken and the following gentlemen were received: Dr. W. T. Schwiesum, Ripon, Wis., and Dr. T. A. Schneekloth, Lodi, Wis. The censors reported favorably and the gentlemen were unanimously elected.

On motion, the Secretary was instructed to call a meeting of the Legislative Committee at Madison in October to frame a bill for the next Legislature, the railway expenses of this committee to be paid by the Society.

On motion, the Society adjourned to meet in Madison subject to call of the President and Secretary.

S. BEATTIE, *Secretary.*

ALLEGHENY COUNTY VETERINARY MEDICAL ASSOCIATION.

A very interesting and instructive meeting was held at Dr. Spindler's office on the evening of Nov. 12th. Members present: Drs. Birch, Boyd, Emery, Hinman, Spindler, Spohn, Taylor and Waugh. Visitors: Drs. A. T. Roll, of Natrona, and Wm. J. Waugh, of Washington. Routine business was trans-

sacted and committees were appointed for future work, and plans formulated to enlarge the association and increase its sphere of usefulness, then occasionally hold surgical clinics.

Dr. James A. Waugh exhibited Dr. Rectenwald's new steel clamp for removing collar tumors and shoe-boils; explained its application and uses, and showed a large shoe-boil as removed that day in his practice.

Dr. A. W. Hinman made some practical remarks on observations on subnormal temperatures in animals.

Hair-balls in calves' stomachs proved an interesting subject, when Dr. James A. Waugh presented seventeen different sized and multi-colored balls received from his friend, Dr. Benj. Howse, U. S. Veterinary Inspector in Allegheny.

Dr. John E. Spindler gave an original and unique lecture on "Greasing a Mit," which dealt freely and fully with the baneful practice of tipping coachmen and whacking up with stable bosses.

Dr. James A. Waugh mentioned an improvement in the surgical technique of Prof. C. C. Lyford's operation for the radical cure of bursal enlargements.

There was free and friendly discussion of all those subjects presented for consideration. Members are exchanging textbooks, and manifest much interest in advancement, and a professional spirit prevails.

JAMES A. WAUGH, V. S., *Secretary.*

PROF. VERANUS A. MOORE, of Cornell University, has consented to address the Veterinary Medical Association of New Jersey on the occasion of its forthcoming annual meeting at Trenton, on Thursday, January 8, 1903, on "Etiology and Prevention of Infectious Diseases of Animals," illustrated by the stereopticon. An illustrated talk on such an important subject to the practicing veterinarian by such a distinguished comparative pathologist and bacteriologist as Professor Moore will in itself be an important feature of the annual meeting of the Veterinary Medical Association of New Jersey. We predict that the attendance will be large at this meeting, not only by New Jersey practitioners, but by veterinarians from neighboring states. Dr. Harker, of Trenton, President Wm. Herbert Lowe and Secretary George W. Pope are already at work arranging and perfecting plans for the coming great State Veterinary Convention at the Capital City of New Jersey.

PRESIDENT WM. HERBERT LOWE announces that the State Board of Veterinary Medical Examiners of New Jersey will be in session at the State House, Trenton, N. J., the two days following the meeting of the State Association (Jan. 9th and 10th, 1903) for the examination of candidates for license to practice veterinary medicine, surgery and dentistry in that state. Veterinarians intending applying for license to practice in New Jersey will do well to make application to the President or Secretary of the Board at an early date.

NEWS AND ITEMS.

THE family of Dr. James A. Waugh, of Pittsburgh, Pa., are in Oklahoma Territory for the benefit of Mrs. Waugh's health.

DR. ROBERT DICKSON, of New York, made a trip to England and Ireland in October, returning to New York about the 15th ult.

DR. S. R. HOWARD, of Hillsboro, Ohio, contributed a valuable illustrated continued article to the *Rural New Yorker* during October.

NEIL B. JONES, V. S., of Washington C. H., Ohio, has sold his practice, his brother James, of the same place, having also disposed of his practice and removed to Athens, Ohio.

THE NEW YORK-AMERICAN VETERINARY COLLEGE has a class of 60 students this year, a considerable increase over the past six or seven years.

DR. GEORGE ING SMITH, of Lexington, Mo., was married, Oct. 29, to Miss Birchie Dunkley Smith, daughter of Mr. Henry Strong Smith, of Dunksburg, Mo.

ACCORDING to the latest official returns there are in Austria proper, not including Hungary, a total of 9,506,626 cattle, 2,621,026 sheep, 1,015,682 goats and 4,682,734 swine.

GREAT BRITAIN, during the seven months from January 1 to July 31, imported from the United States only 5,724 horses against 14,820 for the same time in 1901.

DR. GELSTON, veterinarian U. S. Army, Fort Assinaboine, Montana, is taking a special course at the New York State Veterinary College.

VETERINARIAN WM. H. PENDRY, of Brooklyn, N. Y., who represented the twentieth Assembly district of Kings County in the last Legislature, and who was renominated by the Republicans of that district, suffered defeat at the late election.

"I VERY HIGHLY ESTEEM THE AMERICAN VETERINARY REVIEW, and cannot get along without its aid and valuable information."—(*D. F. Bowersox, V. S., Aaronsburg, Pa.*)

DR. DON C. AYER, Chief of Inspection, B. A. I., at Omaha, Neb., spent his vacation in the East, and made a pleasant call upon the editor of the REVIEW.

TEN important buyers being interviewed at the Union Stock Yards, Chicago, all agreed that draft horses with weight and quality never were as scarce nor as high in price as now.

DR. D. E. SALMON, Chief of the Bureau of Annual Industry, has been in Europe this fall in the interest of his department.

DR. R. W. HICKMAN, Chief of the Miscellaneous Division of the Bureau of Animal Industry, was in the West during November in the interests of his department.

Two deaths occurred near St. Paul, Minnesota, from glanders. The subjects were farmers, brothers, and the disease was contracted from a glandered horse. They were each sick seventeen days.—(*Iowa Health Bulletin.*)

DR. G. E. NESOM, State Veterinarian of South Carolina, has forwarded us a small pamphlet containing the State law authorizing and regulating the inspection of animals affected with contagious diseases.

TO PROTECT itself from the rain the orang outang crooks its arms over its head. The hair of the orang's upper arm points downward, while on the lower arm it points upward, the apparent purpose being to shed the rain like a thatch.

DR. JAMES A. WAUGH, of Pittsburgh, Pa., writes that Prof. Joseph Hughes' observation that "neurectomy almost invariably results unfavorably in mules," is confirmed by recent terminations in his practice.

DR. L. VAN ES, of Mobile, Ala., has accepted the chair of veterinary science at the North Dakota Agricultural College, Fargo, N. D., and mail matter intended for the doctor after Dec. 25 should be addressed to his new station.

THE departure of Dr. L. Van Es for his new post at the North Dakota Agricultural College, will leave a good opening for some worthy veterinarian at Mobile, Ala. The latter has enjoyed a good practice there for the past eight years.

"HEATHERBLOOM," the sensational high-jumper owned by Mr. Howard Willets, of New York, established a new world's record at the recent Chicago Horse Show, by clearing the rail at 7 feet 8 inches.

WE have received the report of the Government Entomologist for the year 1901 for the Cape of Good Hope, containing a great deal of information upon both the parasites of animals and vegetables, profusely illustrated with original drawings and photographs.

DRS. WM. SHEPPARD, Thomas G. Sherwood, and J. Elmer Ryder were the official veterinarians of the recent National Horse Show at Madison Square Garden, New York, the most successful exhibition of high-class equines ever held in the world.

THE premium of 1000 marks offered by Germany for the proof of trichinosis from eating American pork has stood for two years without a claimant.

ENLARGEMENTS upon the heads of cattle are not always actinomycotic. In a case where 56 head of cattle presenting actinomycotic symptoms were slaughtered, eight cases were found to be tuberculosis of the cervical lymphatic glands.—(G. A. Lytle, M. D. C., in *Quarterly Bulletin of the Chicago Veterinary College*.)

DRS. HAYNE & SON, Jackson, Mich., write under date of Nov. 7: "We are having plenty of experience with tetanus, hog cholera, and milk fever. We are much pleased with our treatment of tetanus." Will our correspondents kindly furnish REVIEW readers with the methods they employ in treating this fatal malady, as a system of treatment which "pleases" the practitioner has been long sought.

FOR GOITRE IN DOGS, try desiccated thyroids in about 5 grain doses or thyroidin in $\frac{1}{2}$ to 1, gradually increased to 2 grains, 3 times daily. Puppies should receive proportionate doses. The above can be administered with the food. For local treatment use iodine ointment for adult dogs and ointment of potassium iodide for puppies.—(E. L. Quitman, M. D. C., in *Quarterly Bulletin of Chicago Veterinary College*.)

DR. J. G. RUTHERFORD, Chief Veterinarian of the Dominion of Canada, and First Vice-President of the A. V. M. A., who extended such a cordial invitation to the Association to meet in Ottawa in 1903, is following up his proposition by portraying the great advantages Ottawa possesses through personal letters to the members. The REVIEW believes that much good would flow to the Association and the profession of Canada by holding a meeting at the Capital of the Canucks.

MRS. WM. H. HARBAUGH, Fairmount, Richmond, Va., writes to the REVIEW that the hospital occupied by her late

husband, who was one of the leading practitioners of the South, is for rent or for sale. There are three or four veterinarians in that place, but Richmond is now a large city of possibly 100,000 inhabitants and quite a horse centre, and the right man, she thinks, could build up a lucrative business.

DR. WALTER REED, U. S. A., who made the famous medical discovery that the yellow fever germ is transmitted by mosquitoes, died at the General Hospital, Washington Barracks, Nov. 23, after an operation for appendicitis. He was fifty-one years of age, and a native of Virginia, having been educated at the University of Virginia, Medical Department, and at Bellevue Hospital Medical College, New York.

HEADLINES from the New York *Herald* of Nov. 17: "Raced with Death in Blazing Motor—Leaning Far Out in Runaway Automobile Two Men Fought for Time—Machine All Aflame Startled Eighth Avenue—Gasoline Tank was On Fire and Lever was Stuck at Full Speed—Sped for Fourteen Blocks—Then Collapsed a Total Wreck—Owner Uninjured, but Chauffeur was Slightly Burned." On the same page this one: "Raced Two Miles in Blazing Automobile."

IT is understood that since the return of Dr. D. E. Salmon, of the Bureau of Animal Industry, Washington, D. C., from Europe he has prepared a report advocating the use of forced draft for the ventilation of cattle stalls and quarters on board ship. He made the trip across the ocean on a cattle steamer, and though his report has not yet been made public it is said to be known that he will advocate the system of forced draft that will do away with some of the funnels on deck and at the same time grant more air to the animals.—(*Breeder's Gazette*.)

DR. W. T. MONSARRAT, of Honolulu, H. I., who was in attendance upon the Minneapolis meeting of the A. V. M. A., reached home Oct. 1. After reading the REVIEW's story of the meeting he wrote: "The congratulations of the veterinary profession are due you for the October number of the REVIEW. It is a masterpiece, and should be a great pride to you. You do not know how I enjoyed it, especially after being among so many of the profession at Minneapolis."

STATE VETERINARIAN TAIT BUTLER, of North Carolina, contributes an article to *The Progressive Farmer*, of Oct. 28, published at Raleigh, on "How to Exterminate Cattle Tick." He takes as his text the resolutions passed by the meeting of State Veterinarians of the Southern States, held at Atlanta, Ga., Oct. 8, 1902, and then gives some very important and

practical points to his readers, who are principally farmers and stockmen. He says that North Carolina is accomplishing more than any other Southern State in her efforts to exterminate the cattle tick, and fully explains the methods employed by him.

DR. CHARLES H. ZINK, who has been filling the position of Inspector in Charge of the B. A. I. work at Buffalo, N. Y., for the past four years, has been transferred to Forth Worth, Texas, for similar duties. Dr. B. P. Wende, of the Buffalo B. A. I. force, has been promoted to the position to succeed Dr. Zink. Dr. Wende is one of the oldest inspectors in the B. A. I. employ, and his many friends will be pleased to hear of his well deserved promotion.

UNTIL recently an opinion has prevailed among veterinarians that tuberculosis in hogs rarely assumes a localized form, that is, it was believed to become so rapidly disseminated that the slightest trace of tubercular deposits was considered sufficient grounds for condemning the carcass. In a recent series of carefully conducted post-mortem examinations made upon a large number of hogs in 50 per cent. of all cases of tuberculosis found, the visible lesions were confined to the lymphatic glands of the head and cervical region, and in 75 per cent. to the lymphatic glands of the head, cervical region and digestive tract.—(G. A. Lytle, M. D. C., in *Quarterly Bulletin of the Chicago Veterinary College*.)

TO MASK CASTOR OIL.—Dr. N. V. Obrastzor, according to the *Province médicale* for October 11th, finds the following preparation masks the flavor of castor oil, with the additional advantage that it exercises an intestinal antiseptic action: Rx Castor oil, 30 grammes (1 ounce); menthol, 0.50 gramme ($7\frac{1}{2}$ grains); tincture of iodine, 10 drops. M. A dessertspoonful for a dose. Before administering this mixture, it is a good plan to make it tepid in a water bath, to dispel the viscosity which is, of itself, such a disagreeable feature of castor oil to invalids. The dose of menthol may appear large, but it must be borne in mind that this drug becomes dissolved in the oil, and is thus in great part eliminated by the intestine.

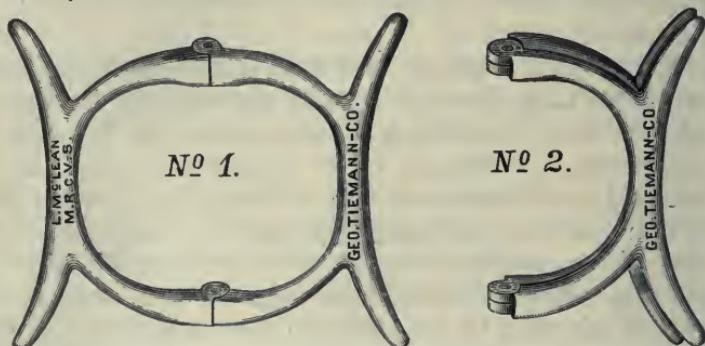
ANDREW MURRAY, of Brooklyn, N. Y., who occupies the position of superintendent and veterinarian to the stables of one of the large dry goods houses of that city, according to the New York *Herald*, removed a cancer from the base of his own tongue with an ordinary scalpel, after eminent surgeons had informed him that he would have to undergo a very skilful operation if

his life was to be saved. The paper relates how he stood in front of a mirror and heroically dissected out the extensive growth, the victim remarking to the reporter the following day that he never felt better in his life. This story will make a good running-mate to the one published some time ago about the "vet" who removed a section of a horse's lung, the animal resuming his accustomed work in a few days, without exhibiting any evidences of the operation. Why can't the lay press print the truth?

THE RESULT OF A BLOW.—If Nicolo Bonnano ever recovers from the effects of a blow which he says Antonio Bolento hit him with his fist, he will need two guesses to tell just what really happened. Bolento's blow landed on his mouth. The result is clearly and tersely told in the certificate issued by Dr. Enrico Scima, of No. 53 Stanton street, who was the attending physician. The certificate reads: "I certify that I had visited Bonnano, fifty years old, and had found in him several lesions superficial of the skin in the nose and in the face and echimosis into the same parties; also asportation of the incisive tooth and luxation of other two teeth in the interior dental series with lesion of the soft parties of the gum. This lesion is curable completely in seven days with doubt of the debility of the luxated teeth."—(*New York World*, Nov. 11.) [How is it that the authorities permit such an ignoramus to practice? It is impossible that he can have a diploma.]

KOCH'S DEFENSE OF HIS VIEWS ON THE TRANSMISSION OF ANIMAL TUBERCULOSIS TO MAN.—At the Congress of Tuberculosis, held recently in Berlin, Professor Koch replied to the strictures which have been passed on all sides upon his thesis of the nontransmissibility of animal tuberculosis to man. One of his arguments in relation to tuberculous milk and meat, however, strikes us as being singularly lacking in perspicacity. Professor Koch is reported to have pointed out that, when poisoned meat is eaten in a community widespread effects follow; and to have asked why no general infection follows the eating of tuberculous meat or the drinking of milk from a tuberculous cow. Surely, the fact that in the case of poisonous meat the immediateness and simultaneity of the effects at once direct the physician's attention to the search for a common source, while, in the case of tuberculous milk or meat, the effects are insidious in their onset, and do not culminate with that *éclat* that marks the other condition, is sufficient answer to Dr. Koch's question.—(*New York Medical Journal*.)

A NEW MOUTH SPECULUM AND BALLING-IRON.—Dr. Lachlan M'Lean, of Brooklyn, N. Y., one of the oldest active practitioners in this country, whose diploma from the Royal College of Veterinary Surgeons (Edinburgh) bears date of the early fifties (we believe 1851), has devised a very practical and convenient mouth speculum and balling-iron, which is shown in the accompanying drawing. The special advantage



of this instrument is that it can be carried in the hand-bag or pocket, particularly for night calls, where it not infrequently happens that a patient suffering from colic will not open the mouth sufficiently wide to administer a bolus. Those who give chloral in capsule form will find it especially safe, for should the capsule slip from the fingers on account of the large amount of saliva usually contained in the mouth during attacks of flatulent colic, it can be readily secured without being crushed between the teeth, with the usual resultant stomatitis. It is often difficult to administer chloral in a drench while the patient is suffering acute pain—the capsule being much more practical.

THE USE OF ANÆSTHETICS IN SURGERY.—The *British Medical Journal* for October 25th, in an article on the "Discovery of Anæsthesia" concludes as follows: "Long was one of the pioneers of the use of anæsthetics in surgery, but there were many others. The chief among them are accurately classified in a little pamphlet privately printed for Professor Stirling, of Manchester, 'in honor of the Victoria Dental Hospital, September 30th, 1902, and in memory of September 30th and October 16th, 1846, Boston, U. S. A.' Professor Stirling sums up the history of the discovery of anæsthesia in the following table:

Nitrous Oxide.

Joseph Priestley	1776
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Humphrey Davy.	1800
Horace Wells [Collyer, Colton, Riggs, Evans, Best].	1844
<i>Sulphuric Ether.</i>	
M. Faraday (?)	1818
W. T. G. Morton [On Himself and on Eben H. Frost] .	1846
‘Before Whom, in all time, Surgery was Agony, Since Whom Science has control of Pain.’	
J. C. Warren [On Gilbert Abbott, 20, painter, single] .	1846
[Wilhite, Long, Jackson, Hayward, Bigelow, Boot, Robinson, Liston, Buchanan, Louget, John Snow, Simpson, Bernard, Clover.]	
<i>Chloroform.</i>	
James Young Simpson	1847
‘I'll imitate the pities of old Surgeons To this lost limb—who 'ere they show their art, Cast me asleep, then cut the diseas'd part.’	

T. Middleton, ‘Women Beware Women,’ iv, I, 1657.

[Guthrie, Sôubeiran, Liebig (1831), Dumas (1834), Waldie, Flourens, G. Keith, M. Duncan, Snow, Nunneley, James Arnott.]

“After judicial weighing of the evidence and careful allotment to each pioneer of his due, the scientific world must, we think, agree with Oliver Wendell Holmes that ‘this priceless gift to humanity went forth from the operating theatre of the Massachusetts General Hospital, and the man to whom the world owes it is Dr. William Thomas Green Morton.’”

SECRETARY JOHN J. REPP'S IMPRESSIONS OF THE 39TH MEETING OF THE A. V. M. A.—The official records show an attendance of about one hundred and twenty-five members, which is somewhat in excess of the Atlantic City meeting; so, in point of numbers, the Minneapolis meeting was a success. The papers and discussions were fully up to the standard of past performances. It should be the ambition of all the members to have presented to the meetings papers of high merit, and to keep the discussions free from irrelevant and worthless matter. We should aim to make the printed proceedings of the highest possible merit, for the Association, and in turn the profession, will be judged largely by the character of the printed proceedings of the annual meetings. The members were not prompt in getting into the convention hall so that the meetings might begin on schedule time. The entire time of the meeting provided for by the programme could easily be utilized in attending to the business and presenting the literary part of the programme. When we get behind time everyone gets nervous, and many do not enter into the discussion because of lack of time. The forenoon session of the first day was abandoned because a large number of members were delayed in their arrival owing to the lateness of the train. I am sure that

these members, as well as others who did not suffer the misfortune of such an annoying delay, have fully resolved that on subsequent occasions they will leave home at a time sufficiently in advance of the meeting to permit of their arrival in due time, even if their train is several hours behind time. This is a praiseworthy resolve. The sessions of the Executive Committee, held during the meeting, are usually extended considerably beyond the time set for opening the convention, and in this way the whole convention body is kept from beginning its work. These delays could be prevented if the Executive Committee would, whenever possible, hold its sessions in the evening, or, if it must have a morning session, by beginning on time and adjourning at the time scheduled for opening the session of the convention. This is a reform that is much needed. The abolition of smoking in the convention hall during the sessions of our Minneapolis meeting was a very commendable act, and one which is doubtless approved by the smokers themselves. The convention halls used for some of our recent meetings have not been as well adapted for the purpose as is desirable. The success of the meeting depends largely upon the kind of hall we have. The members will not remain in a disagreeable place, and visitors will not venture into it. It would be better, if necessary, to pay a moderate sum for the proper kind of room than to accept an undesirable one free of cost. The committee-in-charge should, at future meetings, make sure to obtain a suitable hall. The usual hotel parlor or ordinary is in most cases undesirable. The room should be remote from street or other noises, should be well ventilated and cool, lighted from *both* sides or overhead, and not from in front or behind, and be large enough. Better that it should be too large than too small. If possible, the place of entrance should be from the centre behind and not from one corner, for it is well known that, if the entrance is at one corner, people will crowd about the entrance and will not move over to the far side, even if there are vacant seats there. Our meetings are becoming better every year, and if each member will begin as soon as one meeting is over to make plans whereby he can enhance the excellence of the next one, we will be assured of a rapid and healthy growth of our organization. With a membership of over five hundred active workers there is no reason why the American Veterinary Medical Association should not take high rank among the scientific bodies of America. It should be our aim to see that it does.—(*Journ. Comp. Med.*)

A CLEANING OPERATING TABLE MADE FROM A SAWING MACHINE STAND.—Dr. W. F. Clement, Cincinnati, Ohio, sends a sketch of an improved canine operating table, which is neat, efficient, and clean. In the note accompanying the plan, the doctor says:

"You can easily get this stand made from an old sawing machine stand, the iron parts of which are painted with

zinciferous paint, with the top at white enamel. The plan shows you how the rings at the corners for tying the dog, if used, are very convenient for all manner of operations, particularly castration, where the animal can be placed in any desired position, and the removal of instruments, needles, or any other procedure, where the thoroughly sooty nature of the joints is undesirable. It looks well and can be made inexpensive washing. The cost of it is very small, but those who care to do so, I am sure will appreciate it, as quite well constructed."—*Notre Dame*.

A firm in New York has been making a table very similar to the one shown here, but little better!



Journal

AMERICAN VETERINARY REVIEW.

JANUARY, 1903.

All communications for publication or in reference thereto should be addressed to Prof. Roscoe R. Bell, Seventh Ave. & Union St., Borough of Brooklyn, New York City.

EDITORIAL.

EUROPEAN CHRONICLES.

PARIS, Nov. 15, 1902.

IT is but a few days since the first International Conference on Tuberculosis was held in Berlin, and by the time this will reach our readers, perhaps many have heard or read of the event, and then will consider my subject for a chronicle rather stale.

But how can I help it? Anyhow, from all reports, the first international conference did not prove what was anticipated.

From the opening of the meeting, one might expect much. The number of scientific authorities who were present justified all expectations. It seemed that the event would differ from the banality of ordinary congresses ; that there would be not only more or less interesting reports on the subject of tuberculosis and papers on the struggle against it, but also some facts to draw to a focus the various questions yet unsolved, and declarations from which the official representatives present might draw material to offer to their respective governments, to realize the great object in view : the struggle against the disease.

But such has not been the case ; and, leaving aside the great success which was obtained by the visits and inspections of the two magnificently and luxuriously built and equipped sanitoriums of Belzig and Beelitz, it may be said that the principal subject which occupied the congress was the still unsettled question of unicity of tuberculosis and of the transmissibility of the disease from man to animals and *vice versa*.

The director of the imperial sanitary office, Dr. Kohler, read

in his report the numerous *pro* and *con* arguments relating to the subject, without expressing in his conclusions a firm and categorical opinion. For him, in the actual condition of present knowledge, no one can affirm the identity nor the duality of human and of bovine tuberculosis, but that the principal danger is, not in the transmissibility from animal to man, but from man to man. Yet he sees no objection to the boiling of the milk as patronized by some.

Prof. Nocard answered by a clear and firm declaration in favor of the unicity of tuberculosis. His arguments are powerful, as usual, and if some have already been mentioned, the results obtained by his most recent experiments are still more positive. His conclusions are :

Bovine tuberculosis is transmissible to man. . . . It is specially when drinking the milk from tuberculous udder that man contracts the disease from bovines. . . . The danger exists specially for those who, like children or sick people, make milk the essential or exclusive part of their diet. . . . All cows suffering with tuberculous mammitis ought to be removed from all places where milk production for public use is the principal object. . . . These stables ought to be submitted to periodic inspections. . . . While waiting for those, let the public be always advised that the simplest and surest means of guarding against the danger is the boiling of all milks.

Prof. Arloing spoke in the same sense and with the same conclusions.

The answer of Prof. Koch was anxiously looked for. He spoke for an hour and a half, defending all his theories. For him there does not exist one single observation strictly evident of contamination of people having partaken of tuberculous milk ; isolated facts without post-mortem and without proof excluding other sources of infection are not thoroughly demonstrated ; and even with them it would be necessary to show that bovine tuberculosis was the cause. For him, interhuman contagion only needs to be taken in consideration in the struggle now waging with the disease.

To resume the entire result of the first International Conference, it is this : A dialectical fight between advocates and adversaries of the unicity of tuberculosis without results. Notwithstanding concessions made by both parties, the question remains open.

* * *

IN my "chronicles" of January and of August last, I made allusions to experiments that, for the Société de Médecine Vétérinaire Pratique, Prof. Nocard had been engaged in carrying out. Those experiments had been divided into two series. The results obtained in those were probably the ones alluded to by the learned professor in his remarks at the Congress of Berlin. Those of the first series, our friends know. What are those of the second?

In this, the question to decide was, if possible, the degree of virulence between bovine and human tuberculosis. Was it in the bovine? Was it in the human? Experimental researches have answered. Post-mortem examinations have established the proofs.

Monkeys were bought, divided into lots; those that were to be fed with bovine tuberculous matter and those that were to receive human tuberculous food. The entire progress of the second experiment will be laid before our readers, with that of the first, as soon as the report of the commission shall be made. In the meantime, let me say that the lesions which it has been my good fortune to see leave no room for doubt.

When the cadavers of the animals of experiment were laid open for comparative post-mortems, those that had received the bovine matter offered frightful lesions of tuberculosis, with tuberculous deposits of enormous sizes, while, on the contrary, those that had partaken of human tuberculous cultures presented but trifling lesions, comparatively insignificant, when beside the others. And, yet, the feeding, with the exception of the origin of the tuberculous matter, had been exactly the same for all, and for all the cares had been the same and the mode of infection carried in the same way.

Prof. Koch will probably bear these facts in mind before he is again tempted to renew his assertions, and if, as it seems to be generally admitted, probably the great danger in the propagation of tuberculosis is from man to man, he certainly cannot deny that with greater virulent power bovine tuberculosis must not be ignored. Anyhow, he has already made some concessions, as I have said before, in not objecting to the boiling of the milk.

I have seen to-day the result of another experiment on tuberculosis, which no doubt will interest our readers, but must keep it for my next.

* * *

BARIUM CHLORIDE.—When after observing on two horses the fatal toxic effects of chloride of barium, and after having studied its action when given by the digestive tract, the connective tissue and through the circulation, Dieckerhoff made known his observations and recommended its use in intravenous injections in the treatment of colics in horses, many were those who resorted to it, and chloride of barium became the subject of many important investigations all over Europe, where principally in German publications they were recorded.

It was in 1895 that Dieckerhoff published the results of a first series of 51 cases, and a few months after a second series was made known, in which 136 cases of colic had received the treatment, with only 12 deaths; each one of those was proved at the post-mortem to be due to special lesions, such as twisting of the intestines, volvulus, hernia, or entero-peritonitis following strangulation.

Of course, American veterinarians did not remain indifferent to the new treatment and chloride of barium became also the subject of records and publications which are found in our veterinary papers, among which I find the names of J. J. McCarrey in 1896, of R. W. Ellis and W. P. Straughan in 1897, also that of J. E. Brown in the same year. The general results recorded in American journals are favorable to the use of the salt, and accidents like those recorded by Brown seem

to argue with those among the fatal cases of the second series of Dieckerhoff. That met by Dr. Straughan (sloughing of the jugular, followed by fatal haemorrhage), is probably of a different nature. But, yet, we do not hear anything more from the practitioners of the new world. Has the drug been dropped? Have the records been unsatisfactory?

Such is not the case on this side of the water, and numerous are those who have employed it without ever having had a single accident referable to the chloride. In a recent communication of Prof. Cadiot, who was the first, I believe, to introduce its use in France, I find that Dahlenburg has treated 32 cases successfully; Gruner 48 without any accidents; Hutyra, of Budapest, 191 cases without any fatal effects. Cadiot, when he first spoke of it at the Société Centrale, had already 32 cases successful, and since has treated 162, among which there were 21 deaths by other causes than the toxic effects of chloride of barium.

There is, however, a certain condition where the use of the salt may be followed by fatal results. Its action upon the heart explains it, and if Siebert, Mouilleron, Krentzfeldt, Ries and Mollereau have had cases where the results were not those that they expected, perhaps the deaths may be attributed to the action upon the heart. The doses which were recommended first by Dieckerhoff varied between 0 gr. 50 to 1 gr. 25, according to size. As much as 2 grammes have been used for large horses. At first Cadiot injected somewhat similar doses. But later, by close observation, he has been brought to resort to injections of weak doses repeated, even several times during the cases, so as to obtain all the useful effects of the drug. And now he recommends a first injection of 0 gr. 25 to 0 gr. 50, then 15 minutes later of another of 0 gr. 20 to 0 gr. 30, repeated if necessary 15 or 20 minutes after.

And, again, in some varieties of intestinal obstruction, when the case has existed some length of time, when the organism is already intoxicated by intestinal fermentations, it is better to use only doses of 0 gr. 25 to 0 gr. 40, repeated three or four times about every quarter of an hour.

Thus administered, chloride of barium is still very active, quick in its effects and perfectly inoffensive. At the clinics of the Berlin school, 3000 injections have been done without any fatal accident or toxic effects. And doses of 0 gr. 40 repeated two or three times on 445 cases of colic among the omnibus horses in Paris, have given the same results.

These make an irrefutable record.

* *

THE IMPORTANCE OF A STUDY OF PARACITISM.—The subject of parasites among domestic animals is one which presents many points of interest, and offers a wide field of observation. Many active researches have been made, and many are the works which were written treating of the history, life, effects, etc., of parasites, and every veterinarian is acquainted with those of more modern times and specially with that of Neumann, which was brought within the reach of all English readers by the excellent translation that we owe to Fleming. No doubt the publications that we have from the Bureau of Animal Industry have done much to enlighten our American observers, but yet it seems to us that our *confrères* on the other side of the Atlantic are a little indifferent to the subject, if we are allowed to judge from the lack of communications on their part in our veterinary journals; and, still, outside of the strictly scientific point of view of parasitology, the diseases and symptoms which are related to parasites are of the utmost importance, and the general practitioner, and certainly the sanitarian cannot be allowed to ignore them. They are very common in practice, all our domestic animals are suffering with them, their intimacy in the causes of diseases of both human and veterinary patients, everything in fact points to the great importance of the subject.

If, as it seems to us, American veterinarians are neglectful or indifferent, and if our publications seem to be lacking in reference to animal parasites, it is not the same in Europe, and in almost every journal, articles are found telling of symptoms, treatment, etc., in various cases of different parasitic diseases.

Bovine *cysticerci* have lately been the subject of quite a num-

ber of contributions in Italian and English papers. In the first Dr. Lusé, alluding to some twenty cases which he had found in carcasses of bovines in slaughter-houses, mentioned four specially interesting, where the parasites were found in the tongue, masseter muscles, epicardium, endo- and myocardium, stomach, lungs, cesophagus. They were in fact almost all over except the brain.

After these records relating to cysticerci, our English cousins in the *Record* call attention to several cases of *cœnurus cerebralis* reported by two veterinarians, Dr. Parker and Dr. W. C. Patrick. The former had three cases—one recovered by purging and cold water; another died comatose; the third was killed. Dr. Patrick speaks of two cases upon which he operated by trephining, puncture and removal of the hydatid cyst; both were followed by recovery.

And then, I find in the *Il Nuovo Ercolani*, from Dr. G. de Angelis, the record of a rare case of *echinococci*, rare principally by its seat, it having been found in the cerebellum. The parasite had given rise to such characteristic brain manifestations that a diagnosis of acute hydrocephalitis had been made and that post-mortem partly confirmed, as far as symptomatology went.

It is, therefore, very evident from these reports that parasites are still plenty on the field for studies; and that, if much is already known about them, there still remains enough for all of us to work upon, find out and record. . . . A. L.

THE OUTBREAK OF FOOT-AND-MOUTH DISEASE.

The announcement of the appearance of this highly contagious disease in the New England States was officially proclaimed by the Massachusetts Cattle Bureau on Nov. 26, and the State authorities at once placed a quarantine upon all infected districts. In order that REVIEW readers might have an authoritative statement of the extent of the outbreak, as well as its probable origin, the measures being adopted to check its progress and eradicate it from our previously immune herds, a let-

ter of inquiry was addressed to Dr. D. E. Salmon, Chief of the United States Bureau of Animal Industry, and he promptly replied as follows:

U. S. DEPARTMENT OF AGRICULTURE,
BUREAU OF ANIMAL INDUSTRY.
147 MILK ST., BOSTON, MASS., DEC. 12, 1902.

Editors American Veterinary Review.:

DEAR SIRS:—Replying to your letter of the 9th instant, I would say that it has not been discovered positively how the contagion of foot-and-mouth disease was introduced into Massachusetts. The first cases appear to have been at Chelsea, not very far from the docks, and the most plausible explanation appears to be that the contagion was brought over with hay or bedding for horses. These early cases occurred in August or possibly earlier. It appears strange that the disease was not recognized sooner, but no one was expecting it, and probably the cattle owners concealed it. At present there appear to be about 100 herds affected in Massachusetts, containing in the neighborhood of 2,000 head of cattle. There are 13 herds in Rhode Island containing about 300 head, and 20 herds in Vermont containing something over 300 head, and two herds in New Hampshire. The places where the disease has been discovered have been quarantined under State authority, and the shipment of stock from the infected States, with the exception of New Hampshire, has been prohibited by the United States Department of Agriculture. We have slaughtered some of the outlying herds and are making arrangements to kill off diseased cattle as fast as possible. It is very difficult to maintain quarantines and stop the spread of disease while the affected animals are alive. I enclose copies of circulars of information which we are using.

Very respectfully,

D. E. SALMON, *Chief of Bureau.*

* * *

The circulars referred to are as follows:

INSTRUCTIONS CONCERNING INSPECTION FOR FOOT-AND-MOUTH DISEASE.

U. S. DEPARTMENT OF AGRICULTURE,
BUREAU OF ANIMAL INDUSTRY.
WASHINGTON, D. C., December 3, 1902.

To Inspectors Engaged in Eradication of Foot-and-Mouth Disease:

The eradication of foot-and-mouth disease is the most urgent and important problem confronting the live-stock industry at this time. The inspectors and others engaged upon this work are helping to make an imperishable part of the veterinary sanitary history of the country. Should the disease become more prevalent or escape to the West, the condition would constitute a grave calamity which might easily reach

national proportions. If the disease is confined to its present area and is exterminated there, great credit will be awarded to all who have had a part in this memorable achievement. It is hoped that every individual inspector, agent, or other employee will realize his own great responsibility in this service and will do all that he can do to insure the early and complete eradication of this plague.

For the purpose of explaining and systematizing the work, the following instructions are issued :

Coöperation Between the States and the Federal Government.

The work in hand will be carried out, so far as possible, in coöperation between the authorities of the States and the Bureau of Animal Industry. In some instances agents of the Bureau of Animal Industry will be given commissions from the Cattle Bureau or the Cattle Commission of a State, so that they may exercise authority that is not directly conferred by the Bureau of Animal Industry. The responsibility of the inspectors and agents is in large degree a joint responsibility, as they will be clothed with authority both from the State and the Nation. It is therefore important that all work shall be conducted in full harmony with the State and local inspectors.

General Plan of Operation.

The general plan of operation will be to locate every diseased animal or infected place as soon as possible, and then to establish such restrictions as will effectually prevent the transfer of infection. All infectious material must be held in seclusion until it has perished or has been destroyed; that is to say, until the subjects have fully recovered or have been killed and the premises disinfected.

Everyone is encouraged to send to Dr. S. E. Bennett, 147 Milk Street, Boston, Mass., any reports or rumors that he may hear in regard to the probable or possible existence of disease in any new locality.

Suggestions Regarding Inspections.

In inspecting animals with the view of discovering the existence of foot-and-mouth disease, it should be borne in mind that the acute symptoms causing appreciable illness are of short duration. The cow becomes feverish and depressed not more than a day before the vesicles appear in the characteristic locations. After this the temperature falls to near normal. The vesicles last one or two days, and after they have broken, unless the areas involved are exceptionally large or complications arise, healing starts almost at once. If the vesicles are large or numerous upon the teats or about the hoofs, soreness of these regions may remain for two weeks or more. Therefore, if an inspection is made for the purpose of determining whether a herd has passed through the disease, and

in the absence of superficial erosions upon the pad, within the lips, upon the gums or tongue, special weight should be placed upon slight lameness, undue moisture of the skin between the toes, and sore teats.

It may be of value in some instances to apply at the creamery or milk shipping station for information as to the quantity of milk produced at the time it is suspected that the herd was affected. A more or less sudden fall in the yield, lasting for one or two weeks, might be a valuable clue. Much may sometimes be gained by conversation with cattle dealers and live-stock owners in regard to outbreaks in other places.

In sheep and swine the symptoms are about as they are in cattle, but the vesicles are more likely to be confined to the feet. All exposed cloven-footed animals are to be regarded as possible carriers of the disease and are to be quarantined and reported.

How to Avoid Spreading Infection.

It is of the utmost importance that the inspectors shall not themselves carry infection from place to place. This may be avoided by scrupulous attention to the following precautions :

Each inspector shall be provided with a rubber coat coming to within 9 inches of the ground, a pair of rubber boots, and a bottle of creolin or some mercuric chloride tablets. He should also have a cotton skull-cap that may be carried in the pocket of the rubber coat. Before going into a stable in which there is any reason to suspect that infection may exist, this special attire shall be put on. Upon coming out, the exposed parts of the coat and the boots shall be washed off thoroughly with a 3 per cent. solution of creolin or with mercuric chloride solution, 1 to 1,000. All dust, dirt, and manure shall be removed from the coat and boots in this way. The inspector shall then remove his cap and place it in the pocket of his coat, pack his special clothing in a bag provided for this purpose, and then disinfect his hands. The cap shall be disinfected at the close of each day's work. If so much washing makes the hands sore, rubber gloves may be worn, if disinfected carefully each time after use.

Importance of Absolute Quarantine.

Do not fail to impress upon each person in charge of a quarantined herd the absolute necessity of a strict and complete quarantine. Explain what such a quarantine means. Give to each such person a copy of Circular No. 38, B. A. I., on foot-and-mouth disease. Especially impress the importance of excluding all visitors, and of those who have been about infected cattle or premises keeping away from the stock or premises of others. Remember that dogs and cats must be confined, and all stray animals excluded from quarantined premises. Keep all cattle dealers away.

Reports.

Make reports carefully and promptly. If special conditions of importance arise telephone or telegraph to Dr. S. E. Bennett, 147 Milk Street, Boston. Do not fail to report anything that may have a bearing on the origin or the additional distribution of this disease.

D. E. SALMON, *Chief of Bureau.*

* * *

FOOT-AND-MOUTH DISEASE;—WARNING TO ALL OWNERS OF CATTLE,
SHEEP, AND SWINE.

Why this Circular is Issued.

Foot-and-mouth disease of cattle, sheep, and other ruminants, and swine has recently been brought from some foreign country and has appeared in a few localities in Massachusetts and some adjacent States. Since this disease has been unknown in America for many years, and then but to a limited extent, there are few who have practical knowledge of its nature. As it is vastly in the interest of all owners of cattle, sheep, and swine that this disease shall be eradicated promptly, and as they can render important aid, this circular of information is commended to their careful attention.

What Foot-and-mouth Disease Is,

This disease is an excessively contagious malady peculiar to ruminating animals (cattle, sheep, goats, deer) and swine. Rarely is it transmitted to man. It is characterized by the eruption of vesicles or blisters in the mouth, upon the heels, or between the toes, and upon the teats or udder. The appetite is depressed, the milk flow diminishes, the animal loses condition and becomes lame. After a day or two the vesicles break, peel off, and leave a raw surface that may heal in a few days, or, especially upon the feet and teats, that may remain sore for a long time and lead to serious complications. The death rate is very low, but it attacks the whole herd and many animals are seriously damaged, so that the loss to a herd owner is heavy.

The Importance of Exterminating this Outbreak Here and Now.

European cattle owners have learned by long and bitter experience that this disease is the source of most discouraging and not infrequently of ruinous losses. While the disease does not often kill, it damages, temporarily or permanently, every cow it attacks to the extent of from \$10 to \$40. The total loss on a herd is usually enough to wipe out a dairyman's profits for a year or two. The effect upon fat animals is quite as serious. It is not uncommon for the stock owners of England, France, or Germany to be injured by this disease, in a single year, to the extent of \$5,000,000. With our much larger holdings of live stock

in this country, the possible losses from this disease, if it were to become general, are stupendous and incalculable. At present the disease exists over a comparatively small area. It is confidently believed by the experts who have investigated the situation that it can be controlled and eradicated. It is important that this shall be done, not only that the other parts of the country shall be protected, but also to prevent the frequent visitations of the disease that otherwise would afflict the live stock of New England. To this end, the aid of all stockmen and farmers is requested.

How Foot-and-mouth Disease is Spread.

There is no other disease that is so readily and certainly conveyed by contact. It is also conveyed by exposing healthy animals, even for an instant, to the stables, yards, pastures, or cars that have been occupied by affected animals; by buckets, cloths, brushes, or other objects that have been used by or on diseased cattle; by the use of forage exposed in mangers or even in the distant parts of the stable harboring infected animals. The disease is also carried by small animals, as dogs, cats, rats, birds, or upon the hands, boots, or clothing of men. A road along which diseased cattle have passed, may retain enough virus to infect other cattle that pass over the same place several hours later. Premises occupied by diseased cattle are not safe for other cattle for a few months after the disease has disappeared. In short, it is to be remembered that every diseased animal is dangerous, and also every animal, person, or thing that has been near it or has been near a place occupied by it. Inspectors may avoid the danger of carrying the disease by cleanliness and disinfection.

How Foot-and-mouth Disease may be Recognized.

The symptoms of this disease most obvious to stockmen are: Sluggishness, shivering, poor appetite, stiffness or lameness, collection of saliva upon the lips, slavering, slobbering or drooling, sucking and swallowing motions of the mouth and throat, smacking of the lips, blisters inside the lips, upon the gums, tongue, or roof of the mouth; later, raw sores in the same places. Blisters and sores may also form upon the teats or udder and upon the heels and between the toes. The flow of milk lessens or ceases and the subject usually loses weight. All these symptoms may not be present in the same animal, and all are never present in an animal at one time. Moreover, the symptoms occur in varying degrees of severity. They may be very mild or very intense. The later symptoms may be intense lameness, emaciation, sore teats and garget. With sheep and swine the feet are chiefly affected.

What Owners May Do to Protect their Stock Now and for the Future.

The most important matter is to prevent the infection of animals not

yet exposed. This can be done by avoiding the purchase of affected stock; by excluding all outside animals from the herd or flock; by each person who comes near healthy stock avoiding contact with diseased animals or the places or things contaminated by them; by excluding visitors from the cow stable, sheep and hog pens; and by preventing the access of strange or stray animals, which may carry the virus on their feet or hair, although they are themselves in good health. Neither cows nor bulls should be moved from one place to another for service.

Should the herd or flock become infected, the appearance of the first evidence of disease should be immediately reported to the Chief of the Cattle Bureau, a State Cattle Commissioner, the local inspector of live animals, or to the Bureau of Animal Industry office, 147 Milk Street, Boston, Mass.

Urgent Necessity of Immediate Report of First Symptoms Causing Suspicion.

The eradication of this disease and the removal of all quarantine and other restrictions upon the cattle trade can be materially hastened by the live stock owners themselves, if they will promptly report the first evidence of foot-and-mouth disease in their herds or localities. This fact can not be suppressed and the sooner it is brought to the notice of the proper authorities, the less the resulting damage will be. It is to be hoped that citizens everywhere will realize the importance of aiding the authorities who are working to eradicate this destructive plague, and they can render no more valuable service to themselves, their localities, or the nation than to immediately report a newly infected animal or place.

Fine for Neglect to Report the Disease.

The law of Massachusetts imposes a fine of \$100 on any person who suspects the existence of this disease and fails to report it in writing to the Chief of the Cattle Bureau or his authorized representative.

Approved:

JAMES WILSON,

Secretary of Agriculture.

WASHINGTON, D. C., December 4, 1902.

D. E. SALMON,

Chief of Bureau.

* * *

The great confidence felt in the sagacity, integrity and ability of the Bureau of Animal Industry has been sufficient to prevent that feeling of great alarm which would otherwise be experienced by the veterinary profession and the country at large through the presence of this European scourge upon our soil, for it has shown its capacity to cope with such emergencies

even when the danger was greater and its facilities less perfect. But this feeling of confidence in our national representative should not blind us to a thorough appreciation of the fact that we have upon our shores one of the most actively contagious diseases of the Old World, and one which carries with it great financial loss to our stock-raisers, for should it slip through the quarantine lines already established, and find its way into the vast Western country and its permanent invasion be effected, the calamity to the nation could scarcely be over-estimated.

It is the certain duty and will be the pleasant privilege of every veterinarian to coöperate with the Federal authorities in every way possible to stamp out as quickly and as thoroughly as possible this common danger.

IOWA TAKES A LONG ADVANCE STEP.

At the last meeting of the Iowa State Veterinary Medical Examining Board, composed of Drs. W. A. Heck, H. E. Talbot, and S. H. Johnston, the following resolution was adopted :

Section 2, Article 4.—“Applicants graduating after the third Tuesday in June, 1903, must have pursued the study of veterinary medicine, surgery and dentistry for at least three years, including three regular courses of lectures of at least six months each in different years in some legally incorporated and recognized veterinary college.” (A recognized veterinary college or department for the purpose of these regulations shall be one that is recognized as having all in its course of study and staff of instructors that veterinary colleges giving instruction in the United States have and as having all the requirements that a college giving instruction in veterinary medicine, surgery and dentistry should have.)

The far-reaching effects of this decision for the good of veterinary science can not be over-estimated; for it will not only lift the profession to a higher plane in the State of Iowa, but it will break through the ice of indecision in other commonwealths in the West, paving the way to that general and common requirement which will in time make the qualification of

veterinary licentiates identical in every State in the Union. The Iowa Board is entitled to and will receive the hearty plaudits of the friends of scientific education for the wisdom and courage which they have displayed; and they should be prepared to sustain their act by every means at their command. The profession of New York State know by long experience that not a session of the legislature will pass without one or more attempts being made to let down the bars for the admission of individuals or classes; and our brethren in the Northwest can reap rewards by being forewarned in this regard. The splendid State Association in Iowa is now all-powerful, harmonious and enthusiastic, and can easily by careful cognizance of proposed pernicious legislation, effectually controvert it by united opposition. Three cheers for Iowa!

THE REVIEW tenders its readers the compliments of the season, and wishes them a greater degree of prosperity from all standpoints for the new year than they have enjoyed in the past, which has, however, been one of true progress along the best lines. Educational interests have been more satisfactory than ever in our history, associational usefulness and enthusiasm was never more acute, while the worth of the practitioner from a practical point of view has been more generally and generously recognized by owners of live-stock, whether it has been in consultation upon sanitary questions or the restoration to health or alleviation from pain of a faithful animal servant or companion.

FIGHTING KINDERPEST.—Successful results are said to have been obtained recently with antikinderpest serum in the Muktesar Laboratory near Naini Tal. During the past twelve months enough serum to inoculate 300,000 cattle has been produced there, and more than a hundred veterinary assistants from all parts of India have been trained in applying it. The serum has given satisfactory results wherever it has been tried, and veterinary officers are beginning to find that prejudice against its use is disappearing.—(*Chem. and Drug.*)

ORIGINAL ARTICLES.

HAEMORRHAGIC SEPTICAEMIA.

BY M. H. REYNOLDS, M. D., V. M., UNIVERSITY OF MINNESOTA, ST. ANTHONY PARK, MINN.

(Concluded from page 837.)

PROVISIONAL REPORT ON BACTERIOLOGICAL EXAMINATION OF
HÆMORRHAGIC SEPTICÆMIA AT STATE EXPERIMENT STA-
TION, ST. ANTHONY PARK, JUNE 9TH, 1902.

Specimens were collected from cows No. 1, 2, 3, on June 9th, and from cow No. 4 on June 12th, at autopsies conducted by Drs. Reynolds and Brimhall. *Bacillus bovissepticus* (hæmorrhagic septicæmia) was obtained in pure culture from the liver and spleen of cow No. 4, and was found present also in the lung and meninges of cow No. 1, and in the pharyngeal gland and meninges of cow No. 2, though in these latter two animals the bacillus was mixed with other organisms such as colon bacillus. This was probably due to the fact that the autopsies were not made until several hours after death.

With the cultures obtained from the meninges of cow No. 1, rabbit No. 569 was inoculated intravenously, June 13th, and died on June 14th (*i. e.* in less than 24 hours). From the rabbit the bacillus was obtained in pure culture from the heart's blood.

From cow No. 3 this bacillus was not isolated, probably owing to the very great infection with other microorganisms which had developed after the death of the cow. Further rabbit inoculations will be made. In the meantime, from three of the four sources, the microorganism has been obtained and from one source, cow No. 1, the organism has been shown to be virulent. The strains of bacilli from the other two cows have been inoculated into animals, but as yet no results have been obtained.

Yours truly, F. F. WESBROOK.

UNIVERSITY FARM CASE NOTES.

Iris.—June 8, 3-5 P. M., she was slightly stupid, in standing position, apparently strong and breathing easily. This cow drank naturally and did not show anything unusual except a slight listlessness. Died at 6.15 P. M. Iris' death was very unexpected until within a few minutes before it occurred. (See Fig. 7.)

Vye cow.—June 8, 11 A. M., quiet, apparently comfortable.



FIG. 7.—Iris. University Farm outbreak. An apparently easy attitude, slightly stupid. A moment before, she was drinking and switching flies unconcernedly. The photograph shows her condition at 5 P. M.; at 6.15 P. M. she was dead.

Could walk fairly well, not supposed to be in any serious danger. This cow had a slight convulsion at 9 A. M.

1-3 P. M., quiet, and lying in a comfortable position.

June 9, the cow was found dead early in the morning in a back stable, having forced her way through an intervening door, which had been closed the night before. She had evidently shown great activity before death, although she was very quiet the evening before and not considered to be in immediate danger.



FIG. 8.—Lou. University Farm outbreak, meningeal type; case in first stage, cow stupid.

Lou.—June 8, 3-5 P. M., standing most of the time, walked fairly well but seemed very weak. Died about 6.15 P. M. (See Fig. 8.)

Sweet Clover.—June 8, died about 9 P. M., after an hour or more of intense nervous and physical activity. She was champing jaws spasmodically and had convulsions of face and neck muscles. The earlier history of this case is unknown. This heifer was taken sick suddenly in a pasture to which the other cases had not had access and was the only case to develop in this pasture.

Alzanka.—June 8, quiet at 10-12 A. M. Neck around to the side as in parturient paresis. Could walk but was down most of the time.

3-5 P. M., down all the time, neck in the flank, quiet.

9 P. M., down with neck in right flank most of the time; quiet, stupid, with stertorous breathing.

June 9, 9 A. M., about the same as the previous night.

II A. M., temperature 100.8

2.30 P. M. " 101.8

6.45 P. M. " 102.8

9.40 P. M. " 101.8

June 10, 7 A. M. " 100.8



FIG. 9.—Dell. University Farm outbreak, meningeal type; case in first stage, animal stupid.

This cow died at 10 P. M. Little apparent change in condition until near the end.

Dell.—June 8, 11 A. M., quiet, down most of the time.

At 3 P. M., lying in the yard, stupid, neck bent to one side. She was quiet, although the appearance of her eyes and condition of the cervical and facial muscles suggested a tension of the nervous system. Breathing at this time was stertorous.

10 P. M., temperature 101.5. Down, quiet but showing the usual symptoms in the face and neck. Loss of skin sensation, etc.

June 9, 9 A. M., apparently little change since last night.

2.30 P. M., about the same.

6.45 P. M., temperature 101.6.

9.50 P. M. " 103.4.

This cow died at about 4 A. M. June 10th.

Countess.—June 8, 11 A. M. Respiration stertorous recumbent most of the time, but could walk.

2.30 P. M., pupil of right eye contracted, left dilated.

3.5 P. M., this cow was down most of the time, respiration stertorous. Could walk, but the gait was quite irregular.

June 9, 9 A. M., cow had died during the night and was found out doors having in some way forced her way through or



FIG. 10.—*Dell.* University Farm outbreak. The same animal as figure 9. A slightly later stage of the disease.

under a very heavy sliding door. Evidently there had been intense activity before death.

Euroma.—This was a Jersey cow, giving normally at this time about 14 pounds of milk, testing 5 to 6 per cent. butter fat. She gave on the evening of June 6, 5.1 pounds of milk, testing 6.2 per cent.; on the morning of the 7th, 2.1 pounds of milk, 5.2 per cent. butter fat.

On the morning of the 7th the head was carried to the left; the left ear was more upright than the other and held back in a peculiar position, and the animal seemed stupid.

June 8, 9 P. M., patient was standing grating her teeth and showing very marked spasms of the cervical muscles. The head was now turned around to the right and a portion of the right ear cold. She was not seen during the interval but supposed to be quiet and easy from what was learned of the attendant.

At 9.05 P. M., this cow was found back of a spray pump in the runway, very stupid, weak and with poor circulation. She was in standing position and grating her teeth. Spasms of the cervical muscles were marked. This cow was apparently in very serious condition.

At 10 P. M., there was great nervous excitement, the patient tearing around in a large room with short intervals of comparative quiet. Chewing motion, discharge of frothy saliva and convulsions of the neck and face muscles were continuous.

10. P. M., temperature 104.

10.30 P. M. " 105.

11.20 P. M. " 107.6.

Died at 11.40 P. M.

Note the very rapid rise of temperature.

Trudie Lee.—This cow gave no milk on the evening of June 10. June 11, 10 A. M., temperature 102; 1 P. M., temperature 101.8.

This cow was apparently almost normal on June 11, but showed the usual peculiar expression of eyes and head. She was grating the teeth slightly; salivation was increased and skin sensation good, at least during forenoon; patient slightly dull.

June 11, 1 P. M., down, when made to get up she stretched and seemed to feel first-rate. The nose was moist.

6 P. M., temperature 101.6; neck at right side, hair rough; feet raised several times in a crampy way, nose moist.

9 P. M., temperature 102.6, wild expression in the eyes, and nose dry. She died during the night.

Examination Post-mortem.—Only this one autopsy record of the University Farm cases will be given here. The findings in all cases were very similar and Trudie Lee may be taken as a type.

Trudie Lee, a Jersey cow, in good condition, died early in the morning of June 12. The carcass was in fairly good condition.

There were haemorrhages in several places on superficial parts, under scapulae, etc. There were very marked haemorrhages involving meninges of the medulla, but scarcely showing at all on the brain surface or in its substance. Multiple haemorrhages were thickly scattered over omentum and mesentery, and there were several on the surface of the liver. The heart showed many small haemorrhages on the surface; the right auricle being very markedly haemorrhagic. On the costal pleura there were numerous haemorrhages of varying sizes. The lungs were deeply congested in places, especially in the region of the internal faces.

Lesions were all of marked haemorrhagic character. There were two marked haemorrhages between peritoneal and muscular coats of the uterus, which contained a normal five or six months' foetus.

Comments on Case Notes.

A survey of the foregoing case notes brings to light several interesting points. In the first place it will be noted that the temperatures were normal or subnormal rather than high, until a very short time before death, when the temperature rose very rapidly, notably in the case of Euroma. The evidence on this point is not altogether satisfactory, for in so many of the cases circumstances were such that temperatures could not well be taken during the last hour or so. In the Caffrey cases, where it

was possible to follow the cases entirely through its course from the onset until the fatal termination, the temperatures were normal or subnormal throughout.

In the outbreak which occurred among cattle at the University Experiment Farm the disturbances of the nervous system were particularly marked, so much so that the diagnosis based on both ante and post-mortem symptoms was unanimously considered to be a cerebro-spinal meningitis.

Several of these cases at certain stages very closely resembled typical cases of parturient paresis. (See letter from Dr. Hela, under "Caffrey Outbreak.") It should perhaps be noted that we had one cow taken sick with all the clinical symptoms of this latter disease, the symptoms appearing about 36 hours after parturition. (See "A Supposed Milk Fever Case.") The outbreak previously described as appearing among the dairy cattle belonging to the University Experiment Farm appeared on June 8, or about 11 days after this supposed milk fever case. No examination post-mortem was made of the latter, but in view of the fact that several of the cases which appeared in the general outbreak among our cattle very closely resembled milk fever in all points except in the history of recent parturition, grave doubt has arisen in the mind of the writer whether the supposed milk fever case was not a cerebro-spinal type of haemorrhagic septicæmia instead of parturient paresis. The writer can well understand that a suspicion as to the accuracy of the diagnosis in an apparently typical case of parturient paresis may appear somewhat peculiar, to say the least, but to those of us who saw the cases among our University Farm cattle it does not seem peculiar at all. There does not appear any reason why this peculiar type of haemorrhagic septicæmia could not appear thirty-six hours after parturition as well as at any other period. If we consider the sudden checking of milk flow, the constipation, the posterior paralysis, the lack of skin sensation, the recumbent position, with the head in the flank much of the time, the reason for doubting an apparently clear diagnosis may be easily understood.

A peculiar fact which appeared in connection with our University Farm cases was noticed by the attendants, and every one who saw the case, viz., that the animals nearly all died in what they called the "inverse ratio" *i.e.*, the cases which were apparently most seriously sick early in their histories were the cases which lived the longest, whereas the apparently milder cases died very quickly and very unexpectedly. Those cases which were apparently most seriously sick were the ones which lived until the last ones of the outbreak. The Vye cow is an instance in point. If the brief convulsion on the morning of June 8th had not been seen, this cow would not ordinarily have been considered sick at all beyond a very slight diarrhoea.

Iris was standing in the yard drinking, switching flies, showing nothing whatever apparently wrong with her except slight listlessness as seen in the accompanying photograph, and yet she died very suddenly and unexpectedly, without developing serious symptoms until a very short time before death.

In none of the cases witnessed by the writer has there been a rise of temperature, nor any tenderness on pressure over the spinal column more than elsewhere over the body, but quite a number have shown a hypersensitive condition of the skin in general. None of the cases seen by the writer presented unnatural heat at the base of the horns, or throat paralysis. It will be seen that although the State Farm outbreak was unquestionably a cerebro-spinal meningitis as proven by ante-mortem and post-mortem symptomis, yet it differed in very many particulars from cerebro-spinal meningitis as it appears in the human family.

A CASE OF OVINE HÆMORRHAGIC SEPTICÆMIA.

A show sheep in fine condition, ten months old, which arrived from Canada about the middle of February, was noticed sick February 17th, and died on the 18th. This animal was examined on the 17th about 4 P. M. The patient showed peculiar breathing, there being two or three short, moderately full respirations, and then a considerable interval. Respirations were not very rapid, and quite unlike an ordinary pneumonia.

Neither nasal discharge nor cough was noticed. Temperature and pulse were not taken. This was supposed to be a case of common catarrh and not thought serious. The animal died very unexpectedly.

Autopsy.—Several bright, sharply defined haemorrhagic areas were found on the inner surface of the skin, after removing an excessive amount of fat. There were no haemorrhages on the superficial muscles. The small intestines were evenly and generally congested, but this was comparatively slight. No haemorrhage upon any portion of the alimentary tract. Lungs were as if they had been taken from a hog during an outbreak of hog cholera and swine plague, and were typical of the latter disease. The collapsed areas amounted to probably one-third of the entire lung substance. The heart showed extensive haemorrhagic infiltrations, especially the auricles. Report from Dr. Wesbrook, Director of the Bacteriological Laboratory of the State Board of Health, was to the effect that pure cultures of *Bacillus boviseppticus* were recovered.

SUPPOSED MILK FEVER CASE.

A Jersey cow, of high dairy type, belonging to the University Experimental Farm, calved May 28. She was noticed sick on May 29, and when seen by the writer had lost voluntary control of the limbs; skin sensation was poor over most of the body surface. She was rather quiet with the head in the flank, and the usual retention of faeces and urine. Iodide of potassium, 10 grainmes was dissolved in a quart of warm water at 10.30 A. M., May 29. One-fourth of this was injected into each gland. This treatment apparently had very little effect and the dose was repeated at 9 A. M., May 30. This second dose was practically without effect and the cow died some time during the same afternoon. We did not expect the cow to die at this time and she was not seen during the last few hours. In view of the symptoms which were seen in one general outbreak of haemorrhagic septicæmia where several cases very closely simulated milk fever, the suggestion may not appear unreasonable that this case was either not a case of milk fever or else, if you

please, a case of milk fever caused by the same germ which was apparently responsible for the development of the other cases, which appeared later (see University Farm Outbreak).

SUSPECTED OUTBREAKS NOT UNDER THE PERSONAL OBSERVATION OF THE WRITER.

Mr. Wm. L. Hoover, Faribault, called at my office on Dec. 29 and said he had 17 head of cattle coming two years of age and had lost four; the first case about Dec. 1, and the last one about Dec. 27. The first three died within a week, leaving quite an interval before the fourth one died on Dec. 27. All of these animals died very suddenly. The owner noticed on skinning the animals hæmorrhagic areas on the body surface, particularly on the neck, and stated that a similar condition may



FIG. 11.—Diaphragm Showing Typical Hæmorrhages.

have been present in every case, but it was not noticed. He did not know whether similar areas had appeared upon the viscera or not.

Mr. E. G. Stark came to see me on Dec. 29, concerning the loss of cattle in his neighborhood. He reported that Mr. Isaac Carter had lost three cattle in about a week—out of a total of 12 head. This occurred just before Christmas. The first one died in about six hours after having been noticed sick. The two others also died very suddenly. He could give no information concerning the post-mortem conditions, but stated that the cattle had been fed on shocked corn and kept in the stable and yard.

Later I received a letter from Mr. Stark, dated Jan. 28, giv-

ing more definite information concerning the losses among Mr. Carter's cattle. He states that the first one died about Dec. 10. It had been found sick in the morning and died about 3.30 P. M. The second died about ten days later. On coming up a hill on its return the animal stumbled and fell over dead, and as he states, "it did not even kick after falling." This was a two-year-old steer. The third animal died about four days later. This one was taken sick at about eleven in the morning and lived until four o'clock the next morning, suffering very severely, at least so the owner supposed. This probably means that the animal did considerable struggling and possibly groaning while down. The fourth animal was a young cow, and as he expressed it, "she also died hard." About Jan. 5 or 6, two animals were found dead in the barn in the morning and the next morning two more animals were found dead. *None of these four last animals had been noticed sick.* At the time of this outbreak Mr. Carter had sixteen head of cattle and lost eight. The owner informed Mr. Stark that those cases which had lived long enough to give an opportunity for observations had seemed very tender to the touch, particularly over the spinal column and near the base of the brain. The heads were drawn as far back as possible and the eyes "rolled up." The animals that died had been fed corn on the stalk.

One interesting bit of information in connection with this outbreak was to the effect that the owner had these eight animals drawn out just behind his stacks within a few yards of the barnyard after having removed the skin, and that no further cases appeared. One of the neighbors who skinned most of these animals for Mr. Carter had a nice lot of cattle, but his cattle received no infection.

Mr. Peter Nelson had lost eight and killed two out of a total of seventeen head. The first case appeared early in November. The deaths with the exception of two, came very close together. These two died a week or so later. No careful examination post-mortem was made, and no further information was obtainable from Mr. Nelson.

Mr. Jens Sorenson, of Monticello, wrote me on December 7 concerning some disease among a neighbor's cattle. His letter was to the effect that a certain neighbor had lost eight cattle, and other neighbors had lost cattle from this disease. Some of these cattle which the owners had supposed to be in perfect health had dropped suddenly and died practically without struggling. Others have lived a few hours after being taken sick. The neighbors had noticed that those which lived for a few hours appeared very sensitive along the spinal column. This is very meagre information of course.

Richard Anderson, Belle Plaine, had eleven head and lost four. The first one died about November 13th, the last one November 29th. None were sick at the time the information was received. The period of sickness was given as approximately three hours, but varied. The owner stated that the head was drawn backward after the animals went down; dark red areas were noticed under the skin, but no spots were seen on the internal organs. His cattle were confined to the yard and usually given dry feed, including shocked corn fodder. Mr. Anderson noticed also the peculiar grunting expiration, usual sensitiveness of the body surface under pressure, and that the animals were disinclined to walk around, being apparently sore. He described the typical condition of the intestines and rectal mucous membrane.

DIAGNOSIS.

It is very evident, in view of the widely different types exhibited in different outbreaks, the very brief period of illness and the similarity between this and certain other diseases, that a positive ante-mortem diagnosis is necessarily out of the question in many cases and uncertain in any case, except with the aid of previous autopsy and clear histories in previous cases of a given outbreak. The diagnosis must depend on the history, what little can be learned of the ante-mortem symptoms, and the results of examinations post-mortem. In all cases which came under the observation of the writer, there were opportuni-

A COMPARATIVE STUDY. — HEMORRHAGIC SEPTICÉMIA, ANTHRAX, SYMPTOMATIC ANTHRAX AND CEREBRO-SPINAL MENINGITIS.

	Hæmorrhagic septicæmia.	Anthrax,	Symptomatic anthrax.	Cerebro-spinal meningitis.	Remarks.
Aet. organism.....	Bacillus bovisepcticus	Bacillus anthracis.	Bacillus chauvæci.	Diplococ. intercellularis. Diplococcus pneumoniae.	*In some cases apparently by inoculation.
Infection.....	Method, unknown.*	Ingestion, inhalation and inoculation.	Inoculation.	Uncertain; probably ingestion; possibly inhalation.	
Extent of spread.....	Enzootic.	Enzootic.	Enzootic.	Uncertain; probably food discharges. Insects active agents of spread.	
How spread.....	Unknown.	Movement of any infected substance.*	Carcasses, stagnant water, carcasses, food, etc.	Uncertain; probably food stuuls in many cases.	
Season favoring.....	Indifferent.	Wet spring, then dry, hot summer and fall.	Most common in summer	No satisfactory information.	
Susceptible animals.....	Cattle, sheep, horses, var's wild anim'l's.*	Nearly all domestic animals, many wild anim'l's†	Young cattle, sheep, goat and dog.	[* Possibly swine. † Pig but slightly susceptible.	
Labo'y animal inoc'n	Generally fatal	Generally fatal.	Rabbit and mouse resist. <i>D. intercel.</i> , resisted by G. <i>D. pneumoniae</i> gen. fatal.	‡ Rare in cattle over 2 years old.	
SYMPTOMS :					
Onset.....	Sudden except in rare Sudden.	Sudden.		Usually sudden.	
Local lesions.....	Chronic type	Swellings slight or absent.	Swellings usually present.	Absent.	
Urine.....	Sometimes b l o o d stained	Frequently b l o o d stained	Sometimes blood stained and emphysematus.		*Not emphysematus
Faces	Often blood stained when live sev'l days	Frequently b l o o d stained	Sometimes blood stained or dark.	<i>Normal appearance.</i>	
Temperature	Frequently normal or sub-normal.*	Very high early.	Very high early, fall later.	Very high early, may Normal.	
MORBID ANATOMY :					
Subcutaneous gas.....	Absent at death.	Absent at death; but decomposition rapid.	Present before death.	Absent.	
Blood.....	Normal.	Dark, feeble coag.	No From gen. circul'n normal.	Normal.	
Hæmorrhages	Usually present.*	Very general.	Reddens on exposure.	Reported present; but diagnosis questioned.	
Serous cavities.....	Walls frequently show small haemorrhages	Not general; but may occur in various tissues.	Reddish serum usually present.*	May contain reddish or lemon yellow serum.	
Spleen.....	Normal, except super	All organs subject	Normal.	Normal.	
Mortality	80-90%.	Official haemorrhages	80-100%.	* Especially in the abdominal cavity.	

ties for such examinations because all cases terminated fatally.

Differential Diagnosis.—So far as facts occur to the writer at present, the differential diagnosis comes between anthrax, symptomatic anthrax, corn stalk disease, specific cerebro-spinal meningitis. There is no question in the writer's mind but that haemorrhagic septicæmia has in the past been very frequently diagnosed as other diseases, particularly as anthrax and symptomatic anthrax. The writer suspects that very many cases of so-called corn stalk disease have been nothing more or less than the disease now under discussion.

The differential diagnosis is perhaps shown as clearly in the preceding table as could be given in any other way.

The ante-mortem differential diagnosis, exclusive of laboratory findings, between haemorrhagic septicæmia and anthrax is to be made upon the appearance of the blood, the history of spread, the extent of spread and temperature.

The ante-mortem differential diagnosis, exclusive of laboratory findings, between haemorrhagic septicæmia and symptomatic anthrax must evidently be based upon the history of the cases, especially the ages of animals affected, temperature, local superficial lesions, and examination of blood taken from the tumor in case such lesion is present.

A discussion of differential ante-mortem diagnosis, exclusive of laboratory findings, between haemorrhagic septicæmia and specific cerebro-spinal meningitis of cattle is apparently not justified by existing reliable information concerning these two diseases. Our Minnesota outbreaks of infectious cerebro-spinal meningitis among cattle have been of a rapidly fatal type and showing so far as our present knowledge of the subject is concerned no clinical evidence upon which a differential ante-mortem diagnosis could be made. In other words for our ante-mortem diagnosis between these two diseases we are at present dependent almost wholly upon the laboratory.

It will be noted in studying the table that in their histories and general clinical evidences these two diseases run very closely parallel but may be very easily distinguished at autopsy

when the typical hæmorrhagic lesions appear in the one and do not appear in the other.

The post-mortem differential diagnosis between hæmorrhagic septicæmia and anthrax rests upon the appearance of the blood and condition of the spleen. In so far as general hæmorrhagic conditions are concerned ; hæmorrhages involving the serous cavities ; results of inoculation with the laboratory animals ; and hæmorrhages involving the heart or its membranes and also in mortality the diseases are very closely parallel indeed.

The post-mortem differential diagnosis between hæmorrhagic septicæmia and symptomatic anthrax lies : in the appearance of multiple localized hæmorrhagic areas in the former, but not in the latter ; and emphysematous tumors involving the subcutaneous ærolar and muscular tissues, especially of the upper portions of the limbs, which are frequently present in the latter but not in the former.

The post-mortem differential diagnosis between hæmorrhagic septicæmia and cerebro-spinal meningitis, except in the cerebro-spinal type of the former, rests upon the involvement of the brain and cord, and their membranes, and upon the presence or absence of the typical hæmorrhages elsewhere. Localized hæmorrhages elsewhere in the one case or their absence in the other, should clear up the diagnosis as positively as would be possible without laboratory work. The differential diagnosis, so far as laboratory work is concerned is apparently not particularly difficult, provided the work can be done under favorable conditions.

It is out of the question to discuss intelligently the differential diagnosis either ante or post-mortem between hæmorrhagic septicæmia and corn stalk disease until we know something at least of what the latter is and have some definite information concerning it.

Treatment deserves no discussion, for, so far as our present information concerning the disease extends, it is a waste of time and medicine, although it is true that the two animals, Alzanka and Dell (University Experiment Farm outbreak), received full

doses of nerve sedatives, and lived very much longer than other cases, but terminated in death just the same.



FIG. 12.—Swine Plague Hæmorrhages. These hæmorrhages resemble very closely the hæmorrhages of bovine hæmorrhagic septicæmia. It is interesting to note that the specific germ or germs of swine plague and hæmorrhagic septicæmia are not distinguishable by any known laboratory procedure.

GENERAL CONCLUSIONS.

For the present, at least, we must consider the term "hæmorrhagic septicæmia" as quite inclusive, a sort of generic name which must cover a multitude of widely varying types of disease, in all of which the specific microorganism *B. bovis-septicus* is found, and so far as our present information is concerned we are apparently justified in considering this germ as the specific cause of the widely varying types. It is also safe to assume that it is not by any means a new disease, the only new feature about it being probably its definite diagnosis by Dr. Wilson of the Laboratory of the Minnesota State Board of Health. Very many outbreaks of this disease have unquestionably been diagnosed as corn-stalk disease, black leg, and anthrax. Those of us who have been so fortunate, or unfortunate perhaps, as to have had personal experience with the disease in Minnesota have had occasion to smile at the clearly described typical outbreaks of hæmorrhagic septicæmia appearing in our veterinary journals under other names.

AT the recent Orange Horse Show (Orange, N. J.), Dr. T. Earle Budd's chestnut mare "Anne Morton" won second prize in class 23 for single roadsters over 15.1 hands. Both in the quality of horses and the number of exhibits the Orange Horse Show this year is said to have eclipsed any of its predecessors.

THE PATHOLOGY OF INFECTION.

ABSTRACT OF A PRESIDENTIAL ADDRESS BY SIR J. BURDEN SANDERSON,
BART., OF ENGLAND.

Condensed from the *Lancet* by PROF. JAMES L. ROBERTSON, and read before the December Meeting of the Veterinary Medical Association of New York County.

Pathology seeks to investigate the causes of things--the cellular pathology of to-day, for the encounter of disease-producing agents with the living organism presents to us problems which are as truly problems of cellular pathology as are those relating to the processes of inflammation, tubercle or cancer.

The subject is the pathology of infection. Try to translate into language which would have been intelligible to the pathological student of twenty years ago, the technical language which is unavoidable in dealing with notions which have, so to speak, sprung fresh from the laboratory and have not yet had time to clothe themselves in plain English.

Lister had taught us at the end of the sixties the etiology of traumatic inflammation and of the diseases which are associated with it. From Chauveau we had learned that in the liquid contagia of many diseases communicable by inoculation—glanders, sheep-pox, small-pox—the morbid agent could be separated from the liquid in which it was suspended by mechanical means, such as filtration or subsidence, and it had been inferred from this that all such morbid agents were particulate. Villemin had shown that tuberculosis could be communicated with certainty by inoculation. Several years later the specific nature of tubercle was obtained by the discovery of Salomonsen, that if a minimal quantity of tuberculous material is introduced into the anterior chamber of the eye of a rabbit no inflammatory reaction follows, but after an incubation period of two or three weeks tuberculous nodules appear on the iris—the process eventuating in general tuberculosis.

At this time Koch was perfecting that great discovery which was the foundation of the bacteriological method—the discovery that the bacillus of anthrax could be cultivated in success-

ive generations outside the body, and that these generations retained the power of communicating the disease for an unlimited period.

The next important step in the investigation of the process of infection was the discovery that in certain animals the liquor sanguinis is possessed of alexeteric (*alexo*—to “ward off”) properties, by virtue of which it may contribute to the defense of the organism and that in the animals in which the power of resisting specific infection has been acquired by immunization. This power can be transmitted to other individuals by the serum.

The results which have been gained present to the student who desires to bring them into intelligible relation with each other, difficulties which are greater than any which he has to encounter in other branches of pathology.

A few years ago, the contest seemed to be between infected organism and infecting microbe. Now we have also to do with toxins and antitoxins. In the language of a century ago, a transition has taken place from solidism to humoralism, and even the old words have been revived.

To the microscopical methods we have to add chemical ones. If we had to do with substances of known constitution, which could be recognized by their chemical reactions, it might be otherwise, but as yet we are far removed from this knowledge. Now there are two points relating to infection about which all are agreed. One of these is that when a contagium enters the human or animal body, its encounter with the living organism is of a nature of a struggle between two opposing tendencies. We may accept this notion of reciprocal counteraction or antagonism as fundamental, and allow it free scope in our speculations as to the nature of infection. There is one biological law to which there is no exception—the law that in the living organism every part, every organ, works together with the rest for the maintenance and efficiency of the whole, and consequently for the counteraction of whatever is hostile to that end.

The liability to infection which this fact implies must in accordance with the law of adaptation be associated with the power of counteracting it.

The old notion that every bane has its antidote is so far true that every injurious substance which is capable of being assimilated (in the physiological sense) by the living cell, is also capable of exciting in it an abnormal reaction antagonistic to the first.

We have long recognized this power of reaction in the cells of the animal body, but Dr. Walker by his previous studies on the bacillus of typhoid fever, and still more by the experiments published only the other day, has given reason for believing that it is also possessed by the bacillus itself. He has shown that when the bacillus of typhoid fever is grown in a bacteriolytic medium, those bacilli which escape dissolution acquire a higher degree of virulence. In other words, the anti-bacterial reaction of the medium excites in the bacilli which evoked it an anti-antibacterial (*i. e.*, a pro-bacterial) reaction, which is, of course, equivalent to an increase of virulence.

A second point, about which there is also complete agreement, is that of *specificity*. The discovery of the specific cause of tubercle was anticipated and the microorganism itself sought for.

But the most striking result of all has been the discovery of the close analogy between specificity of man and of the higher animals and that of their diseases.

The analogy may be expressed by saying that species in animals and species in infective diseases have this in common—that they can be distinguished by characteristic peculiarities in the liquid part of the circulating blood, characteristics which might be called chemical, were it not that, although they belong not to cells, but to their fluid environment, they are physiological or pathological and not such as the chemist could take cognizance of.

Let us pass on to the discussion of the two forms in which the infective process presents itself—*infection by toxin* and *infection by bacteria*.

We should, as far as possible, confine our attention to what happens in the tissues and structures of the infected organism when attacked by the infecting toxin or bacterium, as the case may be.

Of the first kind of infection diphtheria is the typical instance. Its toxic action can be measured with assured accuracy by determining how much is just enough to kill a given test animal in a given time.

A certain quantity of horse serum prepared by the now familiar method of immunization is proved by experience to counteract that action—*i. e.*, in technical language, to neutralize the *minimal lethal dose*.

This experiment, which has been repeated thousands of times, suggests the existence in toxin and serum of two bodies which enter into chemical combination; but when we seek for the evidence that this is so, we encounter insuperable difficulties.

If the combination of the two antagonistic substances were a chemical one, it would be indicated by chemical reaction, capable of being expressed in chemical language.

In judging of chemical neutralization, we have recourse to a chemical test or indicator; in the present instance our indicator is not chemical but pathological. The reagent used is not a chemical reagent in a test tube, but a living guinea-pig in a cage. The indicator, even if a little less exact, is quite as certain—we are able to observe the pathological effects, but of the substance which produces them we have as yet no exact knowledge.

Later we shall see that certain concomitant phenomena of infection are already accessible to chemico-physical investigation, but this cannot yet be said to be the case as regards the essential process of infection and counter-infection.

We can best judge of this by considering what we know as to the essential nature of the action of the toxin of diphtheria.

The quality which stands first is lethality. This we measure in terms of the M. L. D. unit. It is a process during which the guinea-pig passes more or less gradually from potential to actual death. But lethality is not all.

All toxins in moderate doses do something else. Side by side with the lethal process there is another process, the effects of which tend in the opposite direction. Its nature can be best understood by comparing it to what in physiology is called stimulation. For, just as the introduction of a sated substance into the mouth evokes a corresponding specific sensation, so, when a toxin enters the organism it calls forth an equally specific reaction or response.

It is scarcely needful to point out that this response must have its seat in the living organism or the cells of which it is constituted, and, like other responses to stimulation, there is no constant relation between the intensity of the response and that of its exciting cause.

It is still more important to notice that, although its effects extend not only to the living cells, but to the medium in which they live, the action itself is physiological or vital.

The two properties may be characterized. The lethal effect and that of inducing an antidotal or protective action are so different that it may seem superfluous to contrast them; but their association in the process of infection suggests the question of the nature of the connection between them. That these two actions are wholly independent cannot be asserted, but there are many indications that they are not necessarily dependent on each other.

Let us refer to one or two experimental facts. If, after a lethal dose of toxin has been administered to a guinea-pig, a dose of antitoxin, slightly larger than that necessary to antagonize the toxin *in vitro*, is given immediately, the lethal effects are averted.

But if the antidote is delayed, as in the experiments of Donitz, the quantity of antitoxin required to prevent death must be correspondingly increased, until eventually no amount of it is adequate. The lethal process, therefore, is one of which you can measure the duration in minutes, whereas the reaction is a process of protracted development. It would be difficult to regard them both as direct effects of the same cause.

The complete separateness of the one process from the other is still more strikingly proved by a remarkable series of experiments also relating to tetanus-toxin, made a year ago by Dr. Ritchie. He found that by subjecting tetanus-toxin to the action of very dilute hydrochloric acid for a limited period, it is possible so to modify active tetanus-toxin as to deprive it of its lethality, while retaining its power of exciting antagonistic action. He was thus able to use it at once in much larger dose than would otherwise have been possible, and consequently to bring up his animals very rapidly to such a degree of immunity that (in one series of experiments) they tolerated more than a hundred times the minimal lethal dose.

This very important result seems to make it impossible to question the duality of the two actions of toxin—the lethal and the reactional—but it may still be asked what the nature of the reaction is?

It would be rash to attempt a complete answer to this question, but we have in experiments, such as those of Donitz, an indication which can scarcely be mistaken.

If when an animal is moribund, when the death process is going on and would certainly very shortly end, it can be arrested by an antidote, it is difficult to describe the action of the antidote, otherwise than by saying it is anti-lethal. As to the intimate nature of the antagonism, we are precluded from discussion by the circumstance that the actions which antagonize each other are only known as actions.

Lethality is a property which we cannot investigate *in vitro*.

The sum of what has been said as regards the infections that owe their origin to soluble toxins is that in every such process there are two actions, respectively lethal and reactional, which have their seat in living cells. The latter is not in itself protective, but is able to awaken an anti-lethal reaction in the cells which come under its influence.

You will observe that this statement embodies no theory of the nature of the process.

It aims at setting forth what happens in the simplest and most general terms.

Just as diphtheria and tetanus have served us for the exemplification of the process of infection by soluble toxins, so we may take cholera as an instance of infection by microbes.

Cholera is chosen for the reason that the fundamental experiments of Pfeiffer, which have led to so many important discoveries, related to the cholera-vibrio.

Among the earliest experiments in infective products the peritoneal cavity of the guinea-pig was used as constituting an admirable cultivation chamber, containing endothelial elements prone to proliferate and leucocytes prepared to incorporate whatever particles were presented to them.

The experiment just mentioned consists in this, that you introduce into the peritoneum cholera vibrios of mitigated virulence in less than lethal doses. The effect of the proceeding is that the guinea-pig becomes immune, the signs of which change are (1) that fresh vibrios in many times the lethal dose can be introduced without lethal results, (2) that the vibrios undergo what for the last ten years has been known as bacteriolysis, and (3) that the serum of the animal acquires bacteriolytic and protective properties.

Now, with reference to this bacteriolytic serum: it had already been discovered that it could be deprived of its bacteriolytic power by moderate warming.

But it was found that if the fluid so modified was introduced into the peritoneal cavity its lytic power was promptly restored—whence it was concluded that the constituents of the serum, which was destroyed by warming, was in some form or other produced by contact with living cells.

This contains in a nutshell what is essential in the process of bacterial infection and affords a data on which the distinction between the toxic and the bacterial form of the infective process can be founded.

In the case we first considered the encounter of the organism with a soluble toxin during an active immunization, noth-

ing more is required than that the two actions designated as severally *lethal* and *reactional* should be so opposed to each other that the effect of the former may be more or less balanced by the reaction due to the latter. When, as in natural infection, bacteria appear upon the scene as carriers of infection, it is necessary that (if I may be permitted to use teleological language) the infected organism should conform to the natural conditions of the infected organism.

Pfeiffer's experiment affords grounds for concluding that the power which the serum of animals immunized by his method possesses of dissolving the vibrios is due to a constituent similar in nature to that discovered several years before by Nuttall and Buchner and for the belief that in the bacteriolysis, which in Pfeiffer's experiment took place in the peritoneal cavity, two agents took part, the first of which is clearly a specific product of the collision between bacteria and living tissue, the other preëxisting and non-specific, a normal constituent of living cells.

These suggestions would not have assumed the definite form that we are now able to assign to them had it not been that about the same time another line of investigation was opened which promises to be as fruitful as that of Pfeiffer.

It was discovered that the toxic effects produced by *alien* blood disks (*i. e.*, blood disks from an animal of a different species) when introduced into the living body correspond in many remarkable particulars with those of morbific bacteria.

Burdet first demonstrated that the action of the haemolytic serum thus obtained depends on two constituents, both of intra-cellular origin, one of which was specific and designated by him substance sensibilisatrice, the other non-specific, the analogues of the two, anti-bacterial products mentioned just now. The former is called *'immunisine'*, a word which expresses better than any other the specific property of preparing the blood disk or bacterium, as the case may be, for the lytic action of the second constituent, called by Burdet the *alexine*, and by Ehrlich the *complement*. This is called *lysine*.

The value of this discovery of Burdet consisted in this, that

it added clearness to the interpretation that had already been given of Pfeiffer's reaction, showing that the power which blood disks and bacteria have in common of resisting the solvent (lytic) action of blood and tissues is annulled by the specific protective action called into existence by the penetration into the infected human or animal organism of alien blood disks or bacteria, as the case may be.

Hæmolysis—the property of dissolving the colored blood corpuscles—is possessed by many bacterial products, and particularly by the toxin of tetanus, and that it was discovered by Ehrlich some years ago that the hæmolytic constituent of this toxin was different from the spastic, and that anti-lytic serum could be obtained by the ordinary process of immunization.

We have two kinds of poisons concerned in the production of specific diseases or of morbid states. Toxins which act on particular cells, as on the colored blood disks, toxins which act on the whole body.

PRECEPT AND PRACTICE.—A despatch from Berlin, dated Nov. 29, said : Distinguished members of the Society for the Prevention of Cruelty to Animals have been invited to a horse meat dinner by the *Fleicher Zeitung*, national organ of the German butchers, which says it desires to measure the sincerity of the Society in issuing its recent appeal to the public to eat more horse meat, so as to be merciful to animals unfit for work, which will be relieved of their sufferings if the consumption of horse meat is made more popular. The *Fleicher Zeitung* has not yet received any acceptances to the invitation cards, which were sent out Saturday, and are for December 16. The paper promises to put up as good a horse meat feast as an accomplished cook can produce, but the only material must be an aged, rheumatic beast, such as the Society desires to emancipate. No young colts will do.

"EYES FIRST, then hands, tongues last and least," is the well known advice often given to his pupils by the late Sir George Murray Humphrey, of Cambridge. "What a man sees he can be more or less sure of; what he feels with his hands may be a matter of doubt in dealing with diseases; what he hears may be altogether erroneous and misleading."

ETIOLOGY OF SHOE-BOIL.

BY GEORGE J. GOUBEAUD, D. V. S., BROOKLYN, N. Y.

A Paper read before the 12th Annual Meeting of the New York State Veterinary Medical Society, at Brooklyn, Sept. 9 and 10, 1902.

About two years ago I read an original paper before the New York County Veterinary Medical Association, treating upon the etiology of shoe-boils, or, as it is more properly termed, ulnar fibroma. It was prepared after several years of study, thought, investigation and experiment. Not being easily discouraged by adverse criticism, I have continued investigating up to the present time.

It is with the earnest desire of, as it were, forcing the issue, that I lay this, to me, interesting subject before this Association, a society composed of the foremost thinkers and advanced veterinarians of the country. The evening I read the paper before the N. Y. C. V. M. A. I did not possess as much as one friend, or one who believed in my assertions. In the discussion that followed I was plied with more questions than ten quick thinkers and rapid talkers could answer. Every one opposed me, and I left that meeting more determined than ever that I was right, because no one advanced a common-sense argument, made a reasonable assertion, or presented a rational view to upset my opinion. But since then I have received expressions of opinion which are in accordance with those which I hold. I lay this subject before the members of this Association to get an expression of opinion.

First, I wish to know if I am right, and if so then I have added my mite in advancing the interests of veterinary science; and if wrong, then I have simply been mistaken. I know that it is with no little difficulty some of us cast aside fixed ideas, cherished traditions, the teachings which we received, ideas formed and the impressions conveyed to us in our college days. It is with a certain amount of timidity that I present this paper, and I hope to have your indulgence. It is not the intention of the essayist to enter minutely into the pathology of this affec-

tion, nor describe the various lesions which the injury can produce (for such it primarily is), nor the complications which might arise. Neither its therapy, aside from prevention; the etiology alone will be considered.

The text-books, veterinary authorities, professional and lay writers, and those with whom I have conversed, claim that the shoe or the hoof is the offending agent. The larger number claim that the shoe causes this affection.

We will first take up the shoe as the first cause. The shoe causes shoe-boil, or it does not. The animal is either improperly shod, the heels of the shoe are too long, or they are purposely made long in order to correct some abnormal condition of the foot, or irregularity of the animal's gait.

The animal, while in the recumbent position, rests the elbow upon the heels of the shoe, thus injuring the skin and structure beneath, resulting in the characteristic tumor, or it drops heavily upon the ground whilst assuming the recumbent position. The heels of the shoe come in violent contact with the elbow, and in this manner the tumor is developed.

Now, as a rational conclusion, a result can exist not produced by a cause, or, how can a result take place which is produced by a cause that does not exist, and has no existence, or, in other words, how can a shoe cause shoe-boil when the horse did not wear shoes at the time of the development of the tumor? I have seen colts that never had a shoe upon their feet have these tumors, and I have seen horses without shoes turned loose in a box stall, and horses turned loose without shoes in a pasture lot, develop ulnar tumors. Others have observed the same occurrences and still it seems to make no difference, shoe or no shoe, these animals develop the affection.

I have seen horses wearing rubber pads have a swollen condition of the elbow present itself over night. In two instances the rubber pad was employed as a preventive measure, and still there were recurrences in both cases. I have seen horses wearing the half shoe develop tumor of the elbow. Now, how is it possible for the horse to develop these tumors caused

by the shoe, when the horse does not and did not wear shoes at the time of the occurrence of this affection?

Some claim that the foot causes this abnormality, and I will attempt to disprove the correctness of this assertion, although it will be a much more difficult task.

We will suppose that an animal does rest the elbow upon the foot; which part of the hoof I do not think makes any difference. We will suppose that a weight, say fifty pounds, rests upon the foot and the pressure of the same amount is placed upon the region of the elbow. Does it seem reasonable to suppose that an animal with a healthy brain will lie in that position? Does it seem reasonable to think that an animal will lie half an hour, or an hour, or perhaps longer, without causing extreme pain and discomfort? Does it seem reasonable to think that an animal will so lie upon the skin of the elbow and the structures beneath, which are very sensitive, and that it will injure them so severely without changing its position, and that the necessarily painful and uncomfortable position will not be changed before any damage has been done? As to the foot, will an animal stand that amount of pressure upon the hoof and its sensitive structure? I say, No.

Compress a horse's foot to about a twenty-five pound pressure and I can assure you that he will rebel against any such treatment the moment the test is applied, and it will not be necessary to wait one-half hour for the result; and, again, the usual result of pressure applied to sensitive parts is lowering of the vitality, destruction of the parts, pus formation and sloughs. I ask, how often does this happen? I can answer, very seldom.

For purpose of a better understanding of the subject under consideration, it will be necessary for me to divide ulnar hygromas into two classes—the acute and chronic. This will enable me to better explain the reason for their repeated occurrences, and their non-occurrence.

By the acute hygroma, I mean that condition of the elbow when it is first seen. Here we find an animal with a tumor of the elbow; it is hot, painful upon pressure, more or less oedema

of the skin, the animal has more or less lameness. His condition receives the proper treatment and in due time it disappears. There are no recurrences of the tumor. The severity of symptoms and size of the tumor depending upon the intensity of the cause producing it.

By the chronic form I mean when we have recurrences, or the cause producing this condition is not removed, and the result is an organized tumor. It is removed by surgical procedure, and still there are recurrences. I have seen cases that, in spite of treatment, developed into tumors even after so-called preventive measures were applied, and in order to describe why they developed it will be necessary for me to enter into a discussion upon pathology, which I have no intention of doing.

For the time being we will turn our attention to the cow. Cows have these tumors, but they are rare, which fact can be explained by the difference in the anatomical structure of this region. I have seen but one case in a cow, and this individual animal had a well-developed hygroma of two years standing. A common condition of the elbow, which can be seen in cattle as well as in horses, is a thickened appearance of the skin upon the outside of the ulnar region, sometimes of a scabby appearance, or a large ulcerated wound will be found with the edges much thickened. This condition in cattle is found in milch cows confined in narrow stalls. The animal, while lying in the recumbent position extends the foreleg on the side it lies. It inclines the body to one side, propped up by the side of the stall or partition. The animal in extending the foot will strike the floor of the stall sufficiently hard to injure the skin, but no further, and in time we have the appearance of this condition presenting itself which I have described above.

The reason for the rarity of a well-defined tumor being found upon the elbows of cattle is that the sternum comes in contact with the floor, and the elbows cannot come in touch with the ground. The only manner in which the affected part can become injured is while reclining sideways with the side braced up by the partition. And, again, horses and cattle do not

assume the standing position alike. I say that cows do not wear shoes, they cannot lie upon their feet, and still what causes this condition? Take the dog, especially those of the large variety. This is a common ailment, yet they wear no shoes. They cannot lie upon their feet; still what causes these tumors and their recurrence even after surgical removal?

Take the camel. Its position while recumbent is unlike that of the cow and the horse, but while attempting to rise, is entirely different from that of the horse, and somewhat similar to that of the cow. Elbows, knees, patellar region, os calcis and foot rest upon the ground, and in these parts there is a well-defined thickened condition of the skin, almost bordering upon the appearance of a tumor. I never saw a tumor in this animal, yet these animals wear no shoes, they cannot lie upon their feet. Now, what causes this thickened condition on the skin and the absence of a well-defined tumor?

The same can be said of the giraffe. The buffalo is similar to the cow, elk the same. The bear, fox, tiger and lion are like that of the dog. I saw a well-defined ulnar tumor in a lion, the property of a circus. These animals cannot lie upon their feet, they wear no shoes, and still what causes these growths?

Even man is not exempt from this affection. In this individual case, which I saw in a hospital, the tumor presented all the typical appearance of an ulnar fibroma caused in falling, by striking the elbow upon the ground. This man was an epileptic.

I have read reports in the different medical journals in reference to the tumors. The authorities agree that they are the result of an accident, such as falling, striking the elbow upon some solid body, etc.

And, again, take the horse with the chronic shoe-boil, and admitting that the elbow and foot can come together, the foot can be dislodged most readily with one finger, which I have done numbers of times and in the presence of witnesses. Now, if there was any pressure it would require more than the strength of one finger to dislodge the foot. Again, some claim that the motion of the animal's body causes friction, thus producing this affection.

When an animal assumes the recumbent position, it is with the object of resting its body, not to keep in motion; and secondary friction produces burning, chafing, scalding and removal of the hair and skin; not one of these conditions can be found to exist.

If an animal lies upon the right side, he appears to place the weight upon the elbow and foot. Now, examine the right side and you will find the side upon which most of the weight rests, and you will notice that the foot is either to the right or left of the elbow, and not resting one upon another, however much they may appear to be. And, again, take the vast majority of horses that do not possess this abnormality. They assume the recumbent position with the knees half flexed, the body inclined to one side. It is the normal position and a natural condition, not usually conducive to produce this affection. Take for example, an animal resting in the recumbent position upon the right side. Note its position. The left knee is flexed, the foot and elbow are in almost direct contact, the elbow apparently resting upon the heel of the foot. Now grasp the whole foot with the hand, and you will find that it is most readily and easily dislodged, showing that there is little or no weight placed one upon the other, and because this is the position which is the normal one for an animal to assume, we immediately accuse the shoe or the hoof as the offending agent, simply because we see the elbow and the foot in juxtaposition. We come to the conclusion that the hoof or shoe, or both, cause this abnormality.

It is true that we sometimes find the hoof either to the right or left of the elbow, but this is not common in horses. We will consider the side on which most of the weight rests, as, for example, that of the right side, where we find the hoof in this case, the left can be readily seen, but the right is hidden from view by the animal's sternum and pectoral region and also the bedding. Do we find the foot resting upon the elbow? I say, No. Here we find the foot in the axillary space, toe turned inward, with the elbow resting slightly upon the transverse surface of the fleshy portions of the heels. The weight upon the

parts is distributed in this manner: first to come in contact with the floor is sternum, anterior face of knee, anterior right lateral face of the shin-bone, phalanges, anterior left lateral face of the hoof. To dislodge the hoof upon this side and bring it forward or outward is a difficult task to do. It requires some strength. The cause of this is that the weight is not upon the hoof but upon the structures which I have just described.

A raw surface is very rarely seen upon the internal face of a shoe-boil. It is only seen upon the centre in the upper portion or upon the outside of the tumor.

The position which I have found animals assume, and which I firmly believe to be the cause of this affection, is that an animal will, while attempting to assume standing position, and which he will necessarily have to do, is to extend the foot and flex the knee, thus forming an arch with the foot and elbow resting upon the ground. While attempting to assume the standing position he strikes his elbow forcibly upon the floor or ground, thus producing various lesions. In the course of my investigations I have seen this occur twice, the animals evincing symptoms of acute pain and lameness the following morning.

I also noticed that those which were predisposed to this affection were animals that assumed this position when recumbent, and they slept with the head between the knees and the nose resting upon the floor. They usually rested with one side of the body close to the side of the stall. It will often occur when the animal becomes frightened and arises suddenly. It will then strike its elbow upon the floor in a forcible manner, thus injuring it. I know of one instance where this occurred. I removed a splinter of wood about the size of a match from the skin of the elbow region. The animal was very lame for over a week, after which the lameness gradually passed away, and he made a good recovery with no recurrence.

I have attempted in this short article to express my views as clearly as possible, and I hope in the discussion which follows that I will be able to defend the ideas which I now hold.

EQUISETUM POISONING.

BY FRANK A. RICH,^{V.S., M.D.}, PROFESSOR OF VETERINARY SCIENCE,
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A Paper read before the 39th Annual Meeting of the American Veterinary Medical Association at Minneapolis, Minn., Sept. 1-4, 1902.

The purpose of this paper is to call the attention of the members of the American Veterinary Medical Association to the poisonous effects produced upon horses, and possibly other herbivorous animals, from eating the equisetums, especially the *Equisetum arvense*, or common horsetail. The frequent occurrence of unmistakable equisetum poisoning in some localities, considered together with the widespread distribution of the plant, make it appear that this form of poisoning occurs far more often than is generally supposed, and that possibly many cases passing under diagnosis as something else are allowed to perish for want of definite knowledge on the part of owner, attendant, and perhaps the attending veterinarian, concerning the exact nature of the trouble, and especially its etiology. We feel, however, that such ignorance of the past, in this country at least, is in a great measure excusable, for there is almost no literature in the English language pertaining to the subject. In view of these facts we trust we may be pardoned for entering into a brief description of the plant itself, that we may get somewhat better acquainted with it and the more readily recognize its several species when occurring in hay.

The Equisetaceæ, which form an entirely independent class of the cryptogaminous or flowerless plants, include only one genus equisetum (horsetail family), which comprises forty or more species, about a dozen of which occur in this country. They vary in size from the small *E. scirpoides*, about one to six inches in height and exceedingly slender, to the maximum of the tropics, measuring from twenty to forty feet in height. The more common species range in height from six inches to two or three feet, the structures of all being remarkably uniform. They are widely distributed over the temperate regions of the northern

hemisphere, decreasing in number both toward the pole and equator, being rare in the southern hemisphere.

The equisetums are readily distinguished by their characteristic structure and mode of development. The aerial stems arise from a creeping, underground rhizome, upon which in some species, *i. e.*, *E. arvense*, bulbs or tubers develop containing sufficient food material to enable them to lie dormant for years. The stems are slender and distinctly jointed, presenting symmetrical, hollow, longitudinally furrowed internodes, the solid nodes being encircled by a dentated leaf sheath bearing a whorl of slender-jointed leaves resembling the stem. On account of its limited leaf surface and the presence of chlorophyll and stomata in the stem it falls into the class of so-called switch plants in which the usual assimilative function of leaves is relegated in part to the stems.

The asexual generation of the equisetum is characteristic and very interesting. At the extreme top of the erect stem there is a cone or spike of circumferentially arranged shield-shaped scales, on the under surface of which the spores are developed. In some species, including the common *E. arvense*, a special stem arises from the rhizome, the fertile or fruit stem which bears the cone but no leaves at the nodes, the leaf or sterile stem appearing later. Most species grow by preference on low, moist lands, some are decided water plants, while some will grow almost anywhere provided the soil is sandy or gravelly.

We first met with cases of equisetum poisoning in 1890 while practicing in the Genesee Valley in Western New York. A diagnosis was not made at that time, but the supply of swale hay became exhausted and the animals recovered in spite of energetic medicinal treatment. Upon meeting further cases in the Champlain Valley in Vermont, two years later, we became satisfied that the cause of the peculiar affection existed in the hay. The hay was usually of inferior quality, containing one or more species of ferns, generally the sensitive fern or polypod brake as well as weeds of various kinds, and, as was disclosed by careful investigation, the less conspicuous horsetails. Inquiry among

the farmers of Vermont at institute meetings, and through a circular addressed to them relative to plants poisonous to stock, developed the fact that many had experienced fatal poisoning of horses from feeding hay grown on low-lying meadows, and that they were often compelled to avoid certain fields in selecting their horse hay. Several farmers and horsemen exhibited the particular plant which they believed to cause the trouble, and in every instance it proved to be either *E. arvense* or the sensitive fern.

Such experiences coupled with our own observations relative to the matter caused us to feel very confident that the horsetails were the real cause of the trouble, for in all except our earliest cases careful search always revealed more or less of the equisetum in the hay, while the *Onoclea sensibilis* or sensitive fern could not always be found. On the other hand, we know of farms where *Onoclea sensibilis* forms a large part of the hay grown and is fed to all the farm stock without untoward results.

FEEDING EXPERIMENT.

The apparent extent of the trouble in Vermont, and the conspicuous absence of literature on the subject in the English language, at least, made it seem advisable for the Vermont Experiment Station to investigate the matter thoroughly by feeding experiments and otherwise, and to publish a bulletin explanatory of results for distribution among the farmers. Accordingly in the summer of 1900 a supply of horsetail was secured and cured as for hay. In the following winter it was mixed with good timothy hay in the proportion of one part to four of the latter and fed freely to horses procured for the experiment. One old horse (a poor feeder) received also a small amount of grain. In from two to four weeks all presented the characteristic symptoms hereinafter described, and at the close of the fourth week one died. The following year, 1901-02, the experiment was repeated with the same general results. The horses employed in this second trial being older did not respond quite so early to the action of the poison, but the symptoms were more

severe when once developed, and the trouble progressed to a fatal termination in a much shorter time.

The general symptoms presented in connection with both feeding trials were identical with those observed by us in so many cases before, and the lesions revealed upon post-mortem examination were also similar.

E. ARVENSE.

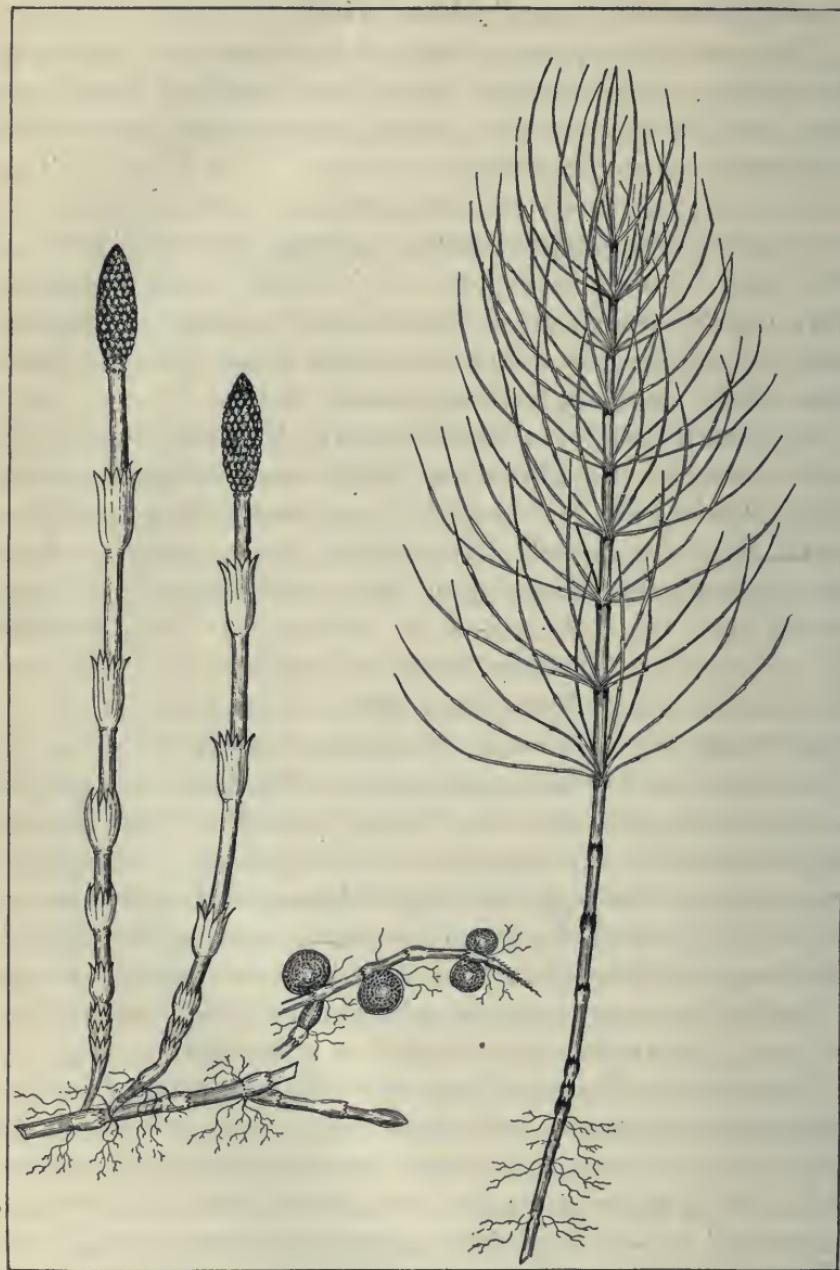
In both feeding experiments *E. arvense* was employed. It is the most common species, in fact, is called common horsetail. Other popular names are coltstail, foxtail, catstail grass, pine-grass, snake grass, jointed rush, meadow pine. The specimens presented are no doubt familiar to most of you.

Professor L. R. Jones, Botanist of the Vermont Experiment Station, who has also given the matter considerable attention, believes that "more or less of the plant may be found on almost every farm in the state." It is probably almost equally common throughout northeastern United States and Canada. Britton's Manual gives the distribution in America as "Newfoundland and Greenland to Alaska and south to Virginia and California." It is also a native of Europe and Asia.

It thrives best on low, moist, sandy or gravelly land in the river valleys on intervalle meadows, occasionally overflowed and not frequently plowed. The hidden perennial rhizome sends forth the fertile or fruiting stems in early spring (April-May). They are pale yellow, jointed, erect shoots, without leaves and terminated by the fruiting cone or spike. After fructification they disappear to be followed by the green branched sterile stems in May and June, which grow to a height of six to eighteen inches.

SYMPTOMS OF EQUISETUM POISONING.

The most constant and noticeable symptom is the loss of coordination of muscular movement, beginning as a slight unsteadiness or uncertainty of gait, most marked when excited. This seeming slight difficulty of locomotion develops more or less rapidly into reeling and staggering when moving, from which the trouble received its German name "*Taumelkrankheit*" (staggering disease). Many of the cases refuse to lie down,



standing with the feet braced, and the body swaying from side to side. There is always apparent loss of flesh, but this is no doubt more apparent than real on account of the progressive muscular rigidity assumed to compensate for difficulty of co-ordination.

A peculiar apprehension figures very prominently among the nervous phenomena of equisetum poisoning. The animal appears frightened, starts at slight noises, and two or more running loose will huddle together when approached.

The appetite generally remains good, even when the animal is down and unable to rise. Thirst is quite marked at times. Temperature frequently becomes sub-normal, rising to 102-3 after going down, probably because of trauma and excitement.

Pulse is full and slow except when excited, increasing to 80-100 when down.

Bowels are constipated throughout course, faeces hard and dark colored, and defecation is attended with straining. Kidneys are active, a large amount of clear, pale urine being voided, showing a low specific gravity.

Mucous membranes are pale, except the conjunctivæ, which are often considerably injected.

Eyes appear very bright, but the pupils are usually much dilated, not responding well to light.

Respiration is normal, when quiet, until late, when it becomes mechanical.

Spirits are good while the case is able to stand. Young animals will even try to play when turned loose, although scarcely able to keep their feet.

After going down they usually live for several days and sometimes two or three weeks, when well nursed.

Movements and noises cause great nervous excitement, all the skeletal muscles become contracted and the limbs are extended and rigid, yet if gently handled, food and water are taken with seeming relish until the animal is too weak to do so.

The horse finally dies from exhaustion induced by trauma and frequent attempts to rise.

Upon post-mortem examination the muscles are found to be pale and flabby, and there is usually some serous effusion in the peritoneal cavity. The principal lesions, however, seem to be in connection with the meninges of the cerebellum and spinal cord, which appear congested and usually contain a considerable serous exudate. In one case, that about the cerebellum was turbid. The digestive tract and other viscera seem normal, except in so far as could be accounted for by medicinal and other interference while down.

A mild or chronic form of equisetum poisoning occurs in young horses and colts from eating moderate amounts of the plant. They become unthrifty, develop some unsteadiness of gait, appear nervous and easily startled by noises.

It requires a long time for such cases fully to recover. We were told by two gentlemen who had had experience with this form of poisoning in colts that they never did so well afterward.

* Fröhner mentions a chronic form of poisoning from the equisetums in which he says they develop a cachexia, finally dying from paralysis and exhaustion.

CONDITIONS INFLUENCING ITS ACTION.

The action of the equisetums upon horses is influenced by certain well-known conditions, as:

Age.—Young horses respond to its action far more quickly than older animals. Colts may show well-marked symptoms in from five to ten days, while old horses sometimes eat large amounts of it for four or five weeks before its poisonous effects become manifest.

Feed.—Horses receiving grain are far less susceptible to its action. Some farmers who experienced trouble in the past from feeding hay containing considerable quantities of equisetum are now feeding it along with a liberal supply of grain without serious consequences.

Quantity.—Many horses eat hay containing a small quantity of equisetum with impunity.

Condition of the Plant.—We find no record of equisetum

* Lehrbuch der Toxikologie für Thierärzte.

poisoning from eating the green plant in pastures. The poison may be developed in drying, or the laxative effect of the grass eaten with it may prevent the cumulative action of the poison.

* Kerner says animals do not eat green equisetums readily and attributes the fact of the large amount of silicic acid in its cell wall, the function of which he believes to be to prevent the wholesale extermination of the plant.

Equisetums are said to be poisonous to cattle also, but we can find no evidence to substantiate the statement. We know of one instance where hay estimated to contain $\frac{1}{4}$ part of *E. arvense* was eaten regularly by cows with impunity. This hay fed to horses caused symptoms of poisoning in five days. The testimony relative to sheep is contradictory. Personally, we know of no cases of poisoning in sheep.

† Dammann fed from three to four pounds per day of fresh *E. palustre* to sheep for nine consecutive days without symptoms of poisoning.

LITERATURE.

We know of no literature in the English language bearing directly upon this subject of equisetum poisoning, except a paper by Professor L. R. Jones, † University of Vermont, and Bulletin No. 95 of the Vermont Experiment Station.

In a review of foreign literature we find quite a number of cases of equisetum poisoning described by German and Russian authorities.

§ Fröhner has collected accounts of several cases which he describes in his excellent text-book of toxicology.

|| Dammann presents the same with some additions. Many of the cases described were produced by other species of *Schachtelhalm*: *E. palustre*, *E. limosum*, and *E. hymale*, but symptoms and post-mortem appearances described were similar to those observed and described herein caused by the more common *E. arvense*.

* Nat. Hist. of Plants, Vol. I., Part I., 432.

† Gesundheitspflege der landwirtschaftlichen Haussäugetiere, 603.

‡ Proc. Soc. Prom. Agr. Science, 1901.

§ Lehrbuch der Toxikologie für Thierärzte.

|| Die Gesundheitspflege der landwirtschaftlichen Haussäugetiere.

Following we present a brief description of a few of the cases occurring in our practice.

Case 1.—Called to a three-year-old mare, found her down, unable to rise, muscles contracted, limbs extended and rigid, very nervous, startled at slight noises, pulse 60, temperature 102.

Extended our examination to fifteen other horses on the farm and found eight others showing well-marked symptoms of horsetail poisoning. They seemed nervous and apprehensive, reeling and staggering like drunken men when turned loose in the yard. All fifteen were fed good timothy hay, but the nine affected ones had been bedded for nearly three weeks with swale hay containing a large amount of equisetum, of which they ate greedily. The other six were bedded with straw and appeared perfectly well. The one found down died after fourteen days, while the remaining eight all recovered in from two to four weeks.

Case 2.—Three horses in a livery stable, previously quiet, became very nervous. One trembled from fear when approached, another had developed profound fear of bicycles and electric cars. Two of them had been treated by a veterinarian for a nervous affection, but continued to grow more nervous. We had them walk out, and all showed marked difficulty of co-ordination.

An examination of the hay fed to them revealed an abundance of equisetum, and a change to wholesome hay resulted in a complete cure in two weeks.

Case 3.—A mare and four-months-old colt by her side ate hay containing a moderate amount of horsetail for ten days, when the colt developed poisoning symptoms rapidly, went down and died two days later. The mare continued to eat the hay for four weeks longer, when she, too, became nervous and began to reel in walking, from which disorder she was two months in recovering. This case is interesting in that it illustrates the influence of age on susceptibility to the action of the plant.

Case 4.—A remarkably gentle young horse exhibited decided incoordination of hind parts, trembled with fear when approached or handled, became frightened and attempted to run away, but soon fell and suffered from a severe epistaxis. The horse had been fed mixed hay containing a dangerous amount of equisetum for nearly three weeks. Cows on the farm had eaten of this hay for five months without apparent injury. Change of hay fed resulted in a complete recovery.

TREATMENT.

Having made a diagnosis of equisetum poisoning and proved the same by finding the plant in dangerous amounts in the hay, it is needless to say that the consumption of this hay should be immediately discontinued.

A dose of physic is of service in aiding the removal of unabsorbed poison contained in the alimentary canal.

We recommend the use of slings in all acute and far advanced cases, while still able to stand, for when once down the prognosis becomes extremely grave.

Stimulants and tonics are no doubt of service in tiding over, provided their administration does not cause too much excitement.

The free exhibition of potassium iodide has been attended with good results in some decidedly chronic cases with a tendency to slow recovery.

ANALYSIS AND MEDICINAL PROPERTIES.

Samples of the equisetum employed in the feeding trials at the Vermont Experiment Station were analyzed by Mr. C. H. Jones, Station Chemist, with the following results:

Moisture (as received)	14.31	per cent.
Dry matter	85.69	"
	100.00	"

Dry matter contains :

Crude ash	19.40	per cent.
Crude protein	10.94	"

Crude fiber	21.30	"
Nitrogen free extract	46.30	"
Crude fat (ether extract)	2.06	"
	100.00	"
Nitrogen	1.75	per cent.
Phosphoric acid	0.61	"
Potassium oxide	4.07	"
Calcium oxide	4.01	"

* F. A. Young found that it yielded to petroleum benzine as a solvent 1.4% of a brownish-green semi-liquid fixed oil which was readily saponified.

It also contains a green, semi-solid resin, sugar and mucilage.

† The infusion of the whole plant (*E. hymale*) has the reputation of being diuretic and is used sometimes in dropsical and renal diseases. The tincture has also been employed in 3 to 5 drop doses.

THE KANSAS CITY VETERINARY COLLEGE has an enrollment this year of 131, the largest in the history of the college. The injection and dissection of dogs has added interest in the dissecting room to the seniors, in addition to horses and cattle.

ENGLAND HAS CONFIDENCE IN OUR INSPECTIONS.—*London, Dec. 18.*—Dr. Wray, a veterinary surgeon, who represents the United States Agricultural Department at the Deptford cattle depot, told a New York *Sun* correspondent to-day that since the prohibition of the importation of cattle from the New England States the British officials had not found even a suspicious case among American cattle, and that they were perfectly satisfied with the precautions taken by the American Government to stamp out the foot-and-mouth disease. Dr. Wray added that he believed that if the outbreak had occurred in any other country but America the British Board of Agriculture would have placed an embargo on the whole country, but it was satisfied with the American precautions and was convinced that they are promptly and thoroughly enforced. Dr. Wray was confident that the prohibition would have little effect on the total of American exports to England, which are heavy this week, there being due to arrive 3348 cattle and 2445 sheep.

* *A. J. P.*, 1886, 419.

† *U. S. Dispensatory*, eighteenth ed., p. 1645.

THE ETIOLOGY OF "HEAVES."

BY W. L. WILLIAMS, V. S., ITHACA, N. Y.

In the November REVIEW (p. 752), Dr. A. H. Baker repeats the oft-made claim that "heaves" "is produced by long-continued over-eating on over-ripe hay," and mentions timothy and red clover hay as the chief offenders.

There is excellent, if not indisputable evidence that "heaves" practically never arises except when so fed, but over-ripe timothy, clover or other food seems insufficient in itself to induce the disease. The over-ripe condition in itself merely introduces an extra amount of woody fibre in comparison to the nutritive particles contained. Other kinds of hay, though far more woody, do not induce "heaves." Prairie hay, straw and corn-fodder do not induce the disease, though allowed to stand long after ripe. The wild grasses of the western plains ripen early in the summer, and the horses graze on this dry, woody food for months each year, but do not contract "heaves." It occurs in stables. At the same time, in stabled horses fed on over-ripe hay, or on straw, with non-laxative grain rations, and perhaps a defective supply of water, there not infrequently occurs from indigestion, impaction of the great colon, but this impaction with woody food shows no tendency to cause "heaves."

In those areas where timothy and clover hay is produced only with the aid of irrigation, "heaves" does not occur. In those sections it grows more luxuriantly, is coarser, and stands more erect, suggesting a greater amount of woody fibre. The farmers are far less careful about the exact season of cutting, and over-ripe hay is quite as common at least as in countries where "heaves" abounds, and no more careless feeders of hay are to be found, as they have no fear of "heaves."

It is well known that a few years since, when the sub-arid region west of the Mississippi river was being rapidly settled, and the demand for horses exceeded the local supply, dealers

habitually bought horses affected with "heaves" and sold them to farmers in the sub-arid belt, knowing the disease would at once cease. The cure was attributed to prairie hay, and no doubt correctly. But go further west into the irrigating regions and the clover or timothy hay will also cure "heaves." Some may think climatic influences upon the animals brings about the cure, but not so, for imported timothy or clover hay causes the disease in these areas.

The question may arise: is timothy and clover hay the direct cause of "heaves" or is it the bearer of the cause of the malady?

There are some marked differences in the character of over-ripe hay grown in arid and humid areas, which should be remembered in considering the cause of "heaves."

In irrigated areas hay, no difference how ripe, has usually not been moistened at any time by rain or dew for a month before cutting, nor while lying in the field. It is, therefore, free from those cryptogamic parasites, rust, etc., so familiar to most of us. Mouldy it may become, if stacked too green, but this does not, so far as known to us, induce "heaves."

In humid areas, where the rainfall is heavy and dews are abundant, over-ripe hay is largely the result of delays owing to extra wet weather, so that in addition to becoming over-ripe, the excessive humidity has favored the growth of fungi. Greatly in addition to this humidity, the over-ripe condition also favors parasitism. Rapidly growing vigorous green vegetation resists the inroads of cryptogams, but once their tissues have become inert by "ripening," they become vastly more vulnerable. It is a common belief of horse owners that such hay is less injurious if thoroughly shaken before feeding. Possibly, if the hay is the *bearer* of the cause of "heaves," it may to a degree be mechanically shaken out, but if the woodiness is the direct cause, then shaking cannot benefit it.

It is possible, if not probable, that if "heaves" is due to some contamination of over-ripe timothy or clover hay, that the cause is not the ordinary mould seen in hay stacked too

green, but to some parasitism developed in the field, while the fodder is still uncut.

As to the curability of "heaves," the writer has not seen a case which would not recover without medication when placed upon proper diet.

The relation of pulmonary emphysema to "heaves" is variously viewed. It scarcely seems that the "emphysema" causes the "heaves," be the former ever so bad. In a susceptible subject, where the malady has been ameliorated by dieting until practically unnoticeable, a full feed of bad hay will render the animal unable to walk and seriously threaten asphyxia in a period of eight or ten hours; surely emphysema cannot be so quickly established to such a violent degree. Then take this same animal, almost ready to fall from asphyxia, and a full dose of atropine sulphate hypodermically will relieve the "heaves," and restore tranquility within ten minutes; surely emphysema of so serious a character cannot be so quickly cured nor relieved.

Emphysema exists beyond a doubt, but what relation does it bear to etiology or symptoms?

If "emphysema" causes the "heaves" then there needs be an explanation of how woody fibre (accepting the over-ripe hay theory) in the stomach can cause rupture of air cells in the lungs. Observing a severe case of "heaves" one might well be surprised that the horse does not rupture some other things besides a few air cells.

We cannot understand how a horse can "heave" violently without causing "emphysema," and we see plenty of cases of marked "emphysema" without "heaves" when the patient is dieted, or drugged, or it is said that the "heaving" may even be stopped by jockeys by a liberal drench of shot and lard.

EXPERIMENTS IN CATTLE AND PIG FEEDING.—The Nebraska Experiment Station has just issued Bulletin No. 75. This is a condensed report on the experiments in feeding animals for the past three years. The bulletin may be obtained free of cost by residents of the state, upon writing to the Agricultural Experiment Station, Lincoln, Nebraska.

REPORTS OF CASES.

"Careful observation makes a skillful practitioner, but his skill dies with him. By recording his observations, he adds to the knowledge of his profession, and assists by his facts in building up the solid edifice of pathological science."

AS TO THE TREATMENT OF PARTURIENT PARESIS.

By J. B. CAUGHEY, D. V. S., Columbiana, Ohio.

I was called on November 15th to see a cow with parturient paresis. She had calved on Tuesday, and was lying on her left side. I placed my finger on the eyelids, which did not move. Temperature, $97\frac{5}{10}$ ° F. Gave the injections as recommended by Dr. Clannahan, of Tennessee, in the February REVIEW (potassium iodide, carbolic acid and glycerine), at 10 A. M., put sponge wet with cold water on her head, also covered her with two blankets. In thirty minutes temperature 99° F. Left at 10.30 A. M., stating I would return at 4 P. M. Found cow looking bright; temperature 103° F. and winking, also moving ears, but had moved herself around some, and was again on her side, having gotten away from the sack of straw I had placed against her shoulder. Milked out the four quarters and repeated the injection, still using the four drachms of potassium iodide, same as first time. Turned her over to inject in two lower quarters. She then aroused and held head up and drank some water. Her bowels had moved some before I arrived. Did not return again, but owner reported on Tuesday that she got on her feet the next morning. This cow had very little gastric trouble; did not bloat any, and did not have any medicine given her by the mouth. I lose all cases of parturient paresis I am called to treat if someone has been drenching them. Lost a case some six weeks since that I treated. A neighbor had given her a pound of salts; she lingered for two weeks; did not eat any unless it was placed in her mouth; would walk around; had a watery discharge from the bowels, which continued until she died. She only had 150 grains of potassium iodide in addition to the carbolic acid and glycerine. The acid and glycerine were not given, only the potassium iodide. I have come to the conclusion that epsom salts must aggravate the disease, as some of it possibly finds its way down the trachea. I dread to treat a case that has been drenched, and have refused two persons in the past four months that came for me to treat their animals.

I would be glad to hear from other practitioners in regard to their experience on that line.

I have noticed in some practitioners' articles or reports of cases of parturient paresis they give the temperature as 104 and 105°. I invariably find it subnormal, viz., 95, 96 and 97°. I had one case this spring that was 107°; she died in one hour. I held a post-mortem, as I supposed she had congestion of the lungs, but found the lungs healthy. It must have been some septic trouble.

COMPLETE EVERSION OF THE UTERUS IN A MARE—RECOVERY.

By J. F. DEVINE, D. V. S., Goshen, N. Y.

On Jan. 18, 9 P. M., received a hurried call to the Parkway Farms, and found a bay mare, due to foal; had been seen by attendant at 8 o'clock, and showed no symptoms of parturition. Mare is now lying on side, with uterus everted and covered with litter, etc. Suddenly she jumps up and whirls the dependent mass against the siding, which causes profuse bleeding. We finally get it on a clean sheet, and after thoroughly cleansing with Sanitas solution, return it to its normal position. Then slush it out freely with the same—four or five pails of warm solution. Attention is now turned to her physical condition. Temperature 103°, pulse 80 and small; body covered with cold perspiration; mare becoming quite uneasy. Gave a drench of ergot, cannabis indica and alcohol; applied alcohol freely to the body, with friction by three attendants on either side; covered the body and legs well, and used cannabis when indicated. She soon became quiet and warm; laid down in about two hours, when straining becomes more frequent, until finally I decided to flood the uterus again, which had a decided beneficial effect, and the straining gradually and permanently subsided. An attendant was left with her constantly, with instructions to press the open hand on the vulva should she show signs of straining.

Her temperature hovered around 103° for four or five days. There also was a slight discharge for about a week, which received no attention.

She made an uneventful recovery. The colt was returned to her on the second day and runs with her still.

PECULIAR DIGESTIVE SYMPTOMS IN A HORSE.

By A. H. IDE, V. S., Lowville, N. Y.

The following described case has proven a puzzle to me, and I write to the REVIEW in the hope that some fellow-practitioner

may throw some light upon the etiology and pathology, and at the same time help to build up our clinical literature.

The patient is a six-year-old mare, weighing 900 pounds, and trotting-bred. The owner says he noticed that the animal seemed to belch gas from the stomach, and he thought that it was caused by a hard drive when she was in a weakened condition, just from grass. She commences to belch gas about one hour after feeding, and continues for about two hours. The eructations cease as soon as the gas begins to pass per rectum. The kind or quantity of the food does not alter the condition. The mouth is continually in motion, and is filled with a sticky saliva, which appears as soon as the belching begins. The nature of the eructations is in the form of rhythmic contractions of the oesophagus, which has the appearance of a bolus of food ascending and descending, accompanied by a gurgling sound. The animal is predisposed to colic, and the above symptoms have been in existence for a year.

Any information respecting the cause, treatment, or prognosis will be gratefully received.

ACTINOMYCOSIS IN STEERS.

Dr. Don C. Ayer, Chief of Inspection, Bureau of Animal Industry, at South Omaha, Neb., has kindly forwarded the accom-



panying photographs of two condemned steers, affected with actinomycosis, and, as will be observed, one is in good flesh, the other quite thin.

THE New York *Spirit of the Times*, the oldest turf newspaper in this country, having been established in 1831, has been purchased by and consolidated with the Chicago *Horseman*.

EXTRACTS FROM EXCHANGES.

GERMAN REVIEW.

By ADOLPH EICHHORN, D. V. S., Bureau of Animal Industry, Milwaukee, Wis.

A NEW PROCEDURE IN PREVENTIVE INOCULATIONS AGAINST ANTHRAX [*Dr. G. Sobernheim*].—Sobernheim, a few years ago, communicated that he succeeded in protecting sheep against experimental anthrax, with the aid of an effective anthrax serum. These experiments proved successful against the feeding of anthrax spores, as well as against subcutaneous inoculations of anthrax bacilli. Farther on, I tried to transfer this passive form of immunization into an active form, using a mixture of anthrax bacilli for the preparatory treatment. For proving the practical applicability of this method on cattle, the author undertook extensive experimentations on this line, in which he was supported by the Prussian Agricultural Department, and by the Agricultural Society of Saxony. The same were begun in February, 1900; for obtaining the serum, two horses, two cattle, and six sheep were used, which were placed in the stables of the bacteriological institution of the Agricultural Society. The treatment of these animals consisted in accordance with the usual principles; at first weakened; later highly virulent cultures were inoculated in increased doses. For the experiments altogether 33 sheep and 18 cattle were used. In the passive immunization, the animals received the serum injected subcutaneously, in various quantities, changing from 10 to 100 ccm., sheep under the skin of the neck, and cattle under the skin of the left side of the neck. A few minutes later they were infected with material of the highest virulence. The combined immunization was accomplished somewhat in another way as in the previous experiments, namely, serum and culture were not used in a prepared mixture; they were injected apart at different places. Generally 5-10-15 ccm. of serum was injected on the left side of the neck and right after 0.5-1 ccm. of slightly weakened anthrax culture in the right side of the neck. Twelve to fourteen days after, they were infected with virulent anthrax. To every series of experiments, one or two not treated control animals were used. The results showed that the anthrax serum in the form

of pure serum immunization, as well as in the combined application with cultures, proved fully the success of the previous experiences, and also proved to be reliable in sheep and cattle. But as the laboratory infection cannot always be identified with the natural disease, therefore inoculations were applied in practice, and in localities and herds where anthrax always was prevalent in great dimensions. These conditions were found fulfilled in the province of Pommern, where the majority of the inoculations were undertaken. In all, up to this time 2700 cattle were inoculated; of those, about 1500 were by Sobernheim himself, the others by competent veterinarians. At first the pure serum immunization was applied, altogether in about 200 cases, but later the combined method was exclusively used. All the animals got over the inoculations without disturbance to their general health; none of them died from the effects of it. At every place where anthrax existed, whether it came on as a sudden outbreak, or was prevalent there for some time, with the aid of the preventive inoculations the outbreak was soon controlled. *From the moment of the inoculations there was not one new case observed.* The immunity from the inoculation proved to be of longer duration and more constant than derived from other methods. The observations made, till this time, which extend over a longer period than nine months, proved that all the animals which were treated with the combined inoculations, were spared from the disease in spite of the fact that in the neighboring localities, where the preventive inoculations were not applied, the disease was prevalent. In numerous cases badly affected animals were saved by larger doses of serum. The anthrax serum therefore proved to be effectual as a curative. From the observations made, Sobernheim's procedure is adaptable as a preventive and curative remedy in combating anthrax. The combined immunization, the simultaneous inoculation with serum and culture, ought to be employed for prophylactical uses at every place where there is a need to protect the endangered stock for about a year against the disease. Besides, the pure serum immunization may be taken into consideration as passive immunization at times, when there is a need for quick action, but not for long duration, and also, for instance, in herds where an outbreak already exists and the disease is to be stamped out rapidly. But in this case it would be advisable to complete it later with the combined inoculation. The advantage of Sobernheim's procedure over Pasteur's method of preventive inoculations are charac-

terized by: (1) The inoculation is dangerless in regard to the health and lives of the animals. (2) The inoculation can be executed in one day, and has not to be repeated, as in the case of Pasteur's method. (3) Stronger and more efficacious cultures are inoculated than in the Pasteur vaccine, whereby in all probabilities a more intense immunization of longer duration results. (4) The anthrax serum itself can be applied in the treatment of diseased animals, which is not the case in Pasteur's method.—(*Berl. Thierarzt. Wochenschr.*)

BEHRING'S IMMUNIZATION AGAINST TUBERCULOSIS.—In last month's editorials of the REVIEW I had the pleasure to read an account of the successful experiments performed by von Behring in regard to immunization of cattle against tuberculosis. As experiments in the laboratory, these have already proved to be a success, and as to its results in practice, Melde, assisted by others, who took a course at the Hygienic Institute, and became acquainted with von Behring's immunization method, started extensive experiments, which are to prove: (1) Whether, by Behring's method, immunized cattle withstand the natural tubercular infection; (2) for what length of time the immunized cattle are protected against tubercular infection; (3) whether two inoculations suffice to confer the animals with a constant immunity, and (4) in what way, and with what financial sacrifice, can the immunization for tuberculosis in cattle be applied in practice. These experiments, as stated, have already been started in the counties of Marburg, Kirchheim, and Frankenberg; altogether about 175 cattle were inoculated in the last two counties; the animals received the first inoculations, while on those in Marburg both inoculations were performed. It will take several years to decide on the four questions. The inoculations were performed in herds where a number of animals suffered from tuberculosis, as proved by the tuberculin test, so that the inoculated animals are constantly in the same stable with the infected ones. The results of such experiments will be naturally more conclusive. The results of those inoculations are of the utmost interest for veterinary science; it means the beginning of the fight to combat this most dreadful disease.—(*Berl. Thierarzt. Wochenschr.*)

IMPROVEMENT IN THE TREATMENT OF PARTURIENT APLEXY [*J. Schmidt-Kolding.*] — Schmidt applies now his treatment with an essential modification. He uses an apparatus to which is attached a bellows. The milk catheter is introduced into the teat, after which, from the bottle turned with the cork

downwards, a $\frac{1}{4}$ liter of the iodide of potassium solution is allowed to flow into one gland. Then the bottle is turned over, and air is pumped through the iodide of potassium solution into the mammae until it becomes tense. This is repeated in all four glands, and followed with a massage of the mammae. After 15 minutes considerable improvement is noticed, and in two to three hours the animal as a general rule gets up.—(*Tijdschr. voor. Veeartseny.*)

A NEW HUMAN ORGAN AND ITS FUNCTION.—Dr. Zuckerkandl, professor of anatomy in Vienna, a short time ago discovered a new organ, which he signifies as a side organ of the sympatheticus. The same are situated in newly-born children, and embryos, as pairs, on both sides of the aorta in the retroperitoneal space, as narrow, light brown, up to 11 mm. long bodies, of the consistency of a lymph gland. By its conformation it appears very much like the cortical substance of the superrenal capsules, and so is its physiological function very similar to it. The extract of this organ, injected intravenously, increases the arterial pressure, and reduces the number of pulse beats; also periodically arrhythmia was observed. As the superrenal capsule develops completely only some time after birth, the author believes that the newly-discovered foetal life organ performs the function of the superrenal capsule during development of the child.—(*Musnchen Med. Wochensch.*)

ENGLISH REVIEW.

By Prof. A. LIAUTARD, M. D., V. M.

INTUSSUSCEPTION OF THE SMALL INTO THE LARGE INTESTINE AND PROTRUSION OF THE FORMER OUTSIDE THE ANUS SO AS TO RESEMBLE PROLAPSUS RECTI IN THE DOG [*H. Gray, M. R. C. V. S.*].—After recording the case of a three-months-old pup which had protruding of the bowels from the anus, and upon which, after three unsuccessful attempts at reduction, the operation of laparotomy had to be performed, to reduce the intussusception, but was followed by death through perforative peritonitis, the writer, from this and several similar cases observed, arrived at the conclusions: “(1) That dogs and cats may have extensive displacement of the bowel without manifesting any serious disturbance, providing milk or liquid diet is given; (2) that in a case having an appearance of the so-called prolapsus recti, it may in reality be a case of intussusception of some

portion of the bowel ; (3) that in case the usual suturing of the anus, passing a stout rectal bougie, giving of enemas whilst the anus of the dog is up in the air and his nose towards the ground, fail to keep the bowel up in the rectum, laparotomy and intra-abdominal examination of the bowels should be carried out without delay ; (4) that in the case of intussusception or even kinking of the bowel favoring a recurrent prolapse, reduction should be made intra-abdominally after other methods have failed ; (5) that in a case where it is feared that the bowel is likely to become again intussuscepted or prolapsed suturing it to the abdominal wall is advisable ; (6) that in intra-abdominal reduction of an intussuscepted bowel the manipulations should always be commenced at the furthest extremity of the intussuscepted bowel and only very little applied to the anterior part of the bowel until the last portion is come to ; it should be pressed up between thumb and finger commencing at the distal end ; (7) that the incarcerated portion of bowel is very liable to undergo a reaction when released, and therefore only a milk diet should be given for a few days at least ; (8) no mutilative surgery should be performed unless the bowel has undergone gangrene."—(*Vet. Record.*)

UTERINE ABSCESS IN A MARE [*R. Barron, M. R. C. V. S.*].—This mare had been bought recently, and for a week has eaten little or nothing. Her temperature was raised, the bowels and bladder acting regularly, the abdomen was pendulous. There was little purulent discharge from the vulva, and vaginal examination revealed the os firmly closed, and the uterus gave the impression to the fingers of being fully distended. A diagnosis of purulent collection was made and a fatal termination looked for. After a few days the animal grew much worse and suspecting pyæmia she was destroyed. At the post-mortem the uterus was seen to be enormously distended, as if containing a foetus, and on being cut open between five and six gallons of thick creamy pus with an offensive odor escaped. The mucous membrane was thickened and showed marks of superficial necrosis. The author adds : "If I had punctured the uterus with a trocar or dilated the os, the abscess could have been evacuated."—(*Vet. Record.*) [Why did he not do it? Specially as he had had a similar case before in a heifer, which he was able to cure.—(*A. L.*.)].

AN INTERESTING CRYPTORCHID [*W. Bower and F. Hobday*].—Unusually interesting and rare is the case of a lady's hunter, which, being troublesome, was suspected of being a

cryptorchid. Being operated, a small irregular body was removed from the extreme upper portion of the right inguinal canal. The horse became quiet for two years, when his bad character returned. A second operation was performed, as it was supposed that possibly the mass removed in the first operation was not the complete testicle. This time a full-sized testicle with the epididymis missing was removed from the abdominal cavity. Radical cure of the bad habits followed. On incising the testicle a large *Strongylus armatus* escaped from its interior, having been apparently about an inch below the surface. The *Strongylus armatus* is not very uncommon in the scrotum of colts on the exterior of the testicle, but its presence in the interior has not been often recorded.—(*Vet. Record.*)

A LARGE CALCULUS IN A DOG [A. J. Sewell].—A retriever dog, only two years old, had appeared always in good health and condition and remained so up to a week of his death. At the post-mortem a calculus was found in the bladder weighing twenty-two ounces. From the photography of the stone, it measured $4\frac{1}{2}$ inches in length and $2\frac{1}{2}$ in width. The author says that the photograph is a shade smaller than the actual stone.—(*Vet. Record.*)

CHOKING IN THE HORSE [W. R. Davis, M. R. C. V. S.].—A colt had been turned out in a field where a lot of spoiled vegetables and potatoes had been thrown. He was found the next day standing in a corner of the field with back arched, saliva dribbling from the nose and very uneasy. On examination, he stood with his head straightened on the neck, making at times attempts to vomit, and discharging mucus from the nostrils. Evidently he was choked by some foreign body, probably arrested in the thoracic portion of the oesophagus, as nothing could be detected on the exploratory portion of the organ. Oil administered was ejected through the nostrils, introduction of a probang was not possible on account of the refractory condition of the patient. It is then that the author resorted to an intravenous injection of pilocarpine, with which he had often good results in cattle. One and a quarter grains of the nitrate dissolved in 75 minims of water was given. In a quarter of an hour, there was great uneasiness, abundant sweating, faeces were passed twice and large quantities of saliva fell from the mouth. After half an hour, the animal seemed easier, took a few swallows of water and a little hay. He was kept tied up for four hours, then took bran mashes and hay. He has been well ever since.—(*Veterin. Journal.*)

PREGNANCY AFTER UNILATERAL OVARIOTOMY IN A TROUBLESOME MARE [*C. Page and F. Hobday, F. R. C. V. S.*].—A valuable thoroughbred mare had a foal and since had proven barren. Covered several times, it was always without success, and lately she has become troublesome, being always in heat. A diseased condition of the ovaries had been diagnosed, and an operation recommended. Under strict antiseptic precautions she was operated by removal of the right ovary, which was found more affected than the left, viz., smaller and harder than normal. She recovered from the operation without trouble and was covered twice. The first time she "turned," but on the second occasion she "held," and at the proper time was delivered of a strong and healthy foal. She is again pregnant.—(*Vet. Record.*)

EXTRAORDINARY DENTIGEROUS CYST OF THE EAR [*F. H. Ridler and F. Hobday, F. R. C. V. S.*].—These forms of cysts are not commonly met with, and when they are generally only one odontoma is present. In this case there were at least two, one being of very large size. Both were distinct from each other and embedded in its own socket. The animal in which they were found was a nine-year-old mare which since several years had suffered from purulent discharge under the ear. On several occasions a swelling would appear, burst or be lanced. Finally the constitution of the animal seemed to suffer from the trouble. She ate with apparent difficulty and had a good deal of pain. A probe introduced into the fistulous tract reached the rough irregular tops of a molar tooth, and an operation was decided upon, but as the animal was in a very poor condition it was found necessary to operate twice. On the first occasion an enormous odontoma, weighing 175 grammes, was removed, and on the second another, weighing 44 grammes. The animal improved considerably after the first operation, but as the wound did not progress satisfactorily the second had to be performed, and even after this it took three months for the wound to heal. The mare grew fat, but yet from the external conformation of the skull the authors think there is reason to suspect the presence of a third tumor.—(*Jour. of Comp. Pathol. and Therap.*)

MYOMA OF THE UTERUS, OVARO-HYSTERECTOMY—RECOVERY [*E. H. Williams, M. R. C. V. S., and F. Hobday, F. R. C. V. S.*].—This case occurred in a well-bred retriever bitch, eleven years old. She has had several litters of puppies, but lately two couplings have given no results. She is thin, weak, feverish, in continuous pain, and on manipulating the abdomen a

swelling is felt. Pressure on the abdomen caused a flow of purulent viscid fluid from the vulva. Treatment seemed to be of no avail, the animal grew worse, becoming prostrate and scarcely able to drag herself. At the end of two months the uterine swelling is felt about the size of an ordinary breakfast cup. Under strict antiseptic cares, ovaro-hysterectomy was performed. The tumor was about the size of an orange and situated in the body of the uterus, close to the junction of the two horns. The weight of the uterus and tumor was 1 pound 6½ ounces. Recovery was absolutely uneventful. The tumor examined under the microscope was found to be a myoma.—(*Journ. of Comp. Pathol. and Therap.*)

INTERESTING INSTANCE OF PROLIFERATION OF OVARIAN TISSUES [*F. Hobday, F. R. C. V. S.*].—A six-months-old female cat having become a nuisance was castrated. But instead of ligaturing the horns and removing the ovaries, the latter were nipped off with the scissors. A week later the animal was sent home recovered from the operation. Five months later she had two kittens. When these were weaned, another operation was decided upon, and the abdomen was opened and the uterus exposed. The ovaries were found to be quite twice as large as they had been and cystic. This time the horns were carefully ligatured above and below each ovary and the whole of the intervening tissue removed. She had no more kittens. The case shows that even if a very small portion of ovarian tissue is left, pregnancy is possible, and also to what an extent those organs may be injured without the destruction of their function and activity.—(*Journ. of Comp. Pathol. and Therap.*)

THE champion pacing stallion "Dan Patch" has been sold to Indianapolis parties for the record price of \$60,000.

"I SAY, DOCTOR, isn't this bill a little excessive? Can't you knock off \$10 or so?" "No; why should I?" "Well, you must remember that it was my horse that introduced pinkeye in this town. Isn't that worth something?"

THAT great pathologist, Virchow of Berlin, whose death is mourned by the entire scientific world, said once: "The body of man is a commonwealth of cells, in which each individual cell stands for a citizen, while the tissues, muscles and bones represent different strata of society. Disease is merely a conflict between the citizens of this commonwealth, who ought to work harmoniously together." In view of this momentous fact it behoves us all to exclaim, "Let us have peace!"

BIBLIOGRAPHY.

THE PATHOLOGY AND DIFFERENTIAL DIAGNOSIS OF INFECTIOUS DISEASES OF ANIMALS. By Veranus Alva Moore, B. S., M. D., Professor of Comparative Pathology, Bacteriology and Meat Inspection, New York State Veterinary College, Cornell University, Ithaca, N. Y. With an Introduction by Daniel Elmer Salmon, D. V. M., Chief of the Bureau of Animal Industry, United States Department of Agriculture. With 8 plates and 73 figures in the text. Pages XIV+380. \$4.00, postpaid. Taylor & Carpenter, Ithaca, N. Y. 1902.

The commanding importance of infectious diseases of the domestic animals has been the cause of an enormous amount of literature in the American veterinary journals for a number of years and the publication of innumerable special works, many of them translations, chiefly from the German; but we have seriously felt the want of a concise and systematic treatise which would in a plain and scientific manner place the subject before the English-speaking veterinary profession, divested of superfluities, but containing all of the material truths that have been accepted and placed among the archives of our knowledge. To the average practitioner and student the subject has appeared so vast and intricate that they have felt that to acquire a clear conception of it—to straighten out in their minds the technicalities and classification of the infecting microorganisms and the diseased conditions which they produce—was a task too large for their limited time and opportunities. The situation needed just such an effort as has been put forth by Prof. Moore, whose well-known versatility in this branch of modern medicine admirably fits him for so important a task. The profession will gladly welcome this new work, which brings the subject right up to the present state of the wonderful progress made in the study of infectious diseases. It is the intention of the author to elaborate upon this maiden volume, and he modestly craves the criticism and suggestions of his *confrères*, to the end that out of the concensus of professional knowledge a final treatise may be produced as nearly perfect as it is possible to attain.

The points that are especially worthy of note in this publication are: (1) The method of classification. The diseases treated are arranged in chapters based upon their generic etiological factors, *i.e.*, diseases due to streptococci are placed in one chapter, those due to bacteria, genus *Bacterium*, in another, and so on for the bacterial diseases, Migula's classification being followed. Then the diseases due to protozoa, fungi, and those for which the etiological factor is unknown are placed in separate chapters. A short chapter on diseases resulting from ani-

mal parasites, and which are liable to be mistaken for strictly infectious diseases, is included. There is an appendix containing a discussion on disinfection. (2) The book deals with the important infectious diseases of animals that occur in this country. With each disease there are a few references to its literature, in this the work that has been done in America has received special attention. (3) In discussing the different diseases considerable attention is given to the symptoms as well as to the etiology. Emphasis is also placed upon the importance of exact methods in diagnosis. (4) In the first chapter there is a concise discussion of infection, channels of infection, wound infection, and several of the diseases resulting from wound infection. Stress is placed on the differential characters of a specific infectious disease as contrasted with dietary and other affections. (5) The work is intended for students and those beginning the study of infectious diseases of animals.

An introduction by Dr. D. E. Salmon, Chief of the Bureau of Animal Industry, is in his forcible and convincing style, showing in the strongest light the greatest necessity for an exact knowledge of the subject by the present generation of veterinarians, and incidentally giving some statistical information regarding the immensity of the investment in domestic animals in this country.

The work is well printed by Taylor & Carpenter, of Ithaca, N. Y., and is now ready for delivery.

TEXT BOOK OF VETERINARY MEDICINE By James Law, F. R. C. V. S., Director of the New York State Veterinary College, Cornell University, Ithaca, N. Y. Vol. IV. Infectious Diseases, Sanitary Science and Police. Large 8vo, 675 pp. Ithaca: Published by the author 1902.

The great task which Prof. Law imposed upon himself of producing a complete treatise upon the vast subject of veterinary medicine is rapidly nearing completion, for during the past month the largest volume of the series was turned out from the bindery, leaving only the fifth volume unpublished, which is about ready for the press. Volumes I, II and III were reviewed in these pages more than a year ago. Volume I treated of general pathology, including diseases of the respiratory and circulatory organs, of the blood vessels and lymphatic system in all domestic animals, and consisted of 410 pages. Volume II had for subject diseases of the digestive organs, liver, pancreas and spleen of the various animals, and had 570 pages, while Volume III described the diseases of the urinary and generative organs, skin, eye, and nervous system, as well as constitutional diseases,

in 600 pages. The scheme of the series is to "place veterinary medicine on a modern basis, embracing the latest advances in bacteriology, pathology and therapeutics, and to recognize the commanding importance of microorganisms, not only in contagious diseases, but also in such non-infectious disorders as germs enter into as secondary yet most important factors." The present volume, therefore, is possibly the most important, as it is the largest of the series, from this standpoint, and the author has certainly performed a vast amount of real hard work in bringing up to date in a scientific manner the most recent discoveries in the microbial maladies. Each disease is treated of separately, and a good feature is the placing of a synopsis of the salient points in the text at the beginning of the chapter, which renders a reference easily made without the necessity of reading the entire article, where it is desired only to ascertain a point of information. The chapters successively are upon pyæmia and septicæmia, malignant oedema, infectious fevers of swine, rouget (rothlauf, red fever of swine—swine erysipelas), hog cholera, swine plague, modified and complex fevers of swine, septicæmia haemorrhagica of bovine animals, of sheep, pneumo-enteritis of sheep, ulcerative infection of the limbs in cattle and sheep, gangrenous infection of the coronet of the horse, strangles (infectious rhino-adenitis), contagious pneumonia in the horse, infectious stable bronchitis, equine influenza (adynamic catarrhal fever of solipeds), epizoötic cellulitis (pink-eye), petechial fever (purpura haemorrhagica) of horses, of cattle, chicken cholera, distemper in dogs and cats, bench-show distemper, emphysematous anthrax, anthrax, suppression and prevention of anthrax in herds, anthrax in man, glanders, farcy in cattle, rabies and hydrophobia, tetanus, foot-and-mouth disease, milk sickness, variola, vesicular exanthema of horses, infectious ulcerous stomatitis in lambs and kids, contagious abortion, infectious enter hepatitis in turkeys, asthenia in chickens, apoplectiform septicæmia in chickens, tuberculosis, louping-ill, braxy, South African horse sickness, dourine, mal de caderas, infectious paraplegia of solipeds in Maraja, infectious paraplegia of solipeds in Europe, Texas fever, ictero-haematuria in sheep, malignant jaundice in dogs, paludism in horses, surra, nagana, lung plague of cattle, Pictou cattle disease (hepatic cirrhosis), white scour, haemoglobinæmia in the horse, infective ulceration of anus and vulva in cattle.

The above enumeration of titles gives a good idea of the immensity of the subjects treated, but conveys to the reader's

mind but an imperfect conception of the work which Prof. Law has accomplished, for some of these subjects are exhaustively considered, his article upon tuberculosis, for instance, requiring one hundred pages; glanders, influenza, lung plague, Texas fever, and anthrax are also lengthy chapters.

The work is written in that clear, forcible style which is characteristic of the author, and with that care and accuracy which distinguishes all of his work. His colleagues are under many obligations to him for having given to his profession such a complete treatise, and they may now feel that their literature has a system which will compare favorably with any in the domain of human medicine.

EXTERNAL FORM OF THE HORSE AND AGE OF THE PRINCIPAL DOMESTIC ANIMALS (*Extérieur du cheval et l'âge des principaux animaux domestiques*) By Montané, Professor at the Veterinary School of Toulouse. 1 vol. in. 18, of 528 pages and 260 illustrations. (J. B. Baillière and fils, 19 rue Hautefeuille, Paris).

Professor Montané has presented under a simple and concise form the most modern data relating to the subject of external form and those concerning the age of domestic animals.

The subject of external form has for object the consideration of the *mechanical* and therefore *saleable value* of the horse, by the examination of the age and of those said forms.

For the man who uses the horse, he is a *machine* to produce so much work. This machine has so much more value when the quantity of work is greater.

The examination of the external conformation indicates the extent of the possible services *at the present time*, while the age gives indications upon their *duration*. Both data complete each other; therefore, they must be attentively analyzed, so as to arrive at a knowledge, as perfect as possible, of the nature of an animal.

The determination of the age meaning a judgment upon the probable duration of the machine, it is necessary to follow it in its periginations to verify the correctness of the appreciation made. For this, it is necessary to have the *description* of the individual and to keep note of all the external characters which will distinguish it from others alike. This description is a complement of the age.

Therefore, the entire subject of external form includes the study of the *age*, the *description* and the conformation.

This last must be considered to the statical and dynamical point of view.

In the former, it includes an *analytical* point of view in

which all the various parts of the body, the *regions*, will be successively examined independently, and a *synthetical* including : (1) the relations of regions between themselves and with the whole, the *proportions*; (2) the relations of the various *lines* of the body towards the vertical and horizontal or the *aplombs*.

In the *dynamic*, the conformation enters in *motion* for the production of work. Its numerous manifestations form a physiological whole known as *action*.

Finally, and to give a practical use, there is necessity to consider into a final chapter, *examination of the horse offered for sale*, the rules to follow to make a good examination of the conformation.

Age, description, regions, proportions, aplombs, actions, examination of the animal offered for sale—such are the various parts which compose the work of Mr. Montané, and which constitutes Volume XXII. of Cadéac Encyclopædia.

CORRESPONDENCE.

THE VIRTUE OF ACCURACY.

NASHVILLE, TENN., Dec. 9, 1902.

Editors American Veterinary Review :

DEAR SIRS :—In looking over the REVIEW this morning I notice on page 806 the following :

"The veterinary colleges of the country without an exception that we have heard have larger classes this year than for half a decade."

This reminds me that you have had no report this session from "The Collin Veterinary Medical College."

I will state that the *college building* has been sold at public auction. Its occupant is now paying rent at so much per month. There is only *one* student in attendance, as against *two* last session, which is a decline of 50%.

Yours truly, G. R. WHITE.

IN the State of New Jersey the State Medical Examining Board, with and after the next examination, June, 1903, will require each candidate for examination to file with his application a recent photograph and an autograph signature duly verified before a notary public.

SOCIETY MEETINGS.

AMERICAN VETERINARY MEDICAL ASSOCIATION.

President Stewart has appointed the following Resident State Secretaries for 1902-03:

Alabama—L. Van Es, Mobile; *Arizona and New Mexico*—J. C. Norton, Phoenix; *Arkansas*—R. R. Dinwiddie, Fayetteville; *British Columbia*—Johnson Gibbins, 1003 Granville St., Vancouver; *California*—J. J. Summerfield, Santa Rosa; *Colorado and Utah*—Thomas Castor, Box 525, Trinidad; *Connecticut*—Thomas Bland, Waterbury; *Delaware*—H. P. Eves, 507 W. 9th St., Wilmington; *District of Columbia*—A. M. Farrington, 1436 Chapin St., Washington; *Florida*—J. G. Hill, 324 Forsyth St., Jacksonville; *Hawaiian Islands*—W. T. Monsarrat, Honolulu; *Illinois*—E. L. Quitman, 489 Jackson Blvd., Chicago; *Indiana*—J. R. Mitchell, Evansville; *Iowa*—Hal C. Simpson, Denison; *Kansas*—N. S. Mayo, Manhattan; *Kentucky*—D. A. Piatt, Lexington; *Louisiana*—E. Pegram Flower, Baton Rouge; *Manitoba*—W. J. Hinman, Winnipeg; *Maryland*—L. A. Nolan, Dillon and Fifth Sts., Baltimore; *Massachusetts*—Benj. D. Pierce, 27 Sanford St., Springfield; *Michigan*—G. W. Dunphy, Quincy; *Minnesota*—J. G. Annand, 414 First Ave., S. E., Minneapolis; *Mississippi*—J. C. Robert, Agricultural College; *Missouri*—T. B. Pote, 4046 Cottage Ave., St. Louis; *Montana*—M. E. Knowles, Helena; *Nebraska*—H. Jensen, Weeping Water; *New Hampshire and Maine*—Lemuel Pope, Jr., 101 State St., Portsmouth, N. H.; *New Jersey*—T. E. Smith, 309 Barrow St., Jersey City; *New York*—Wm. Henry Kelly, 233 Western Ave., Albany; *Nevada and Idaho*—J. Otis Jacobs, Reno, Nev.; *North Carolina*—A. S. Wheeler, Biltmore; *North and South Dakota*—W. F. Crewe, Devil's Lake; *Nova Scotia*—Wm. Jakeman, Halifax; *Ohio*—A. S. Cooley, 1184 E. Madison Ave., Cleveland; *Ontario*—John W. Groves, Hamilton; *Oregon*—Wm. McLean, 328 Fourth St., Portland; *Pennsylvania*—C. J. Marshall, 2004 Pine St., Philadelphia; *Quebec*—Chas. H. Higgins, Department of Agriculture, Ottawa; *Rhode Island*—Thos. E. Robinson, 65 Main St., Westerly; *South Carolina and Georgia*—G. E. Nesom, Clemson College; *Tennessee*—W. C. Rayen, Nashville; *Texas*—M. Francis, College Station; *Washington*—Clarence Loveberry, Care of Frye-Bruhn Co., Seattle; *West Virginia*—F. P. Ruhl, Fairmont; *Wisconsin*—J. T. Hernsheim, Market and Exchange Sts., Kenosha.

Secretary Repp, under date of December 12, 1902, has is-

sued the following circular to the members of the American Veterinary Medical Association:

"The next meeting of the American Veterinary Medical Association will be held at Ottawa, Canada, September 1, 2, 3 and 4, 1903. The vote of the Executive Committee was unanimous for that city as the next meeting place. Invitations have been extended to us by the veterinarians of Ottawa and vicinity, by the Department of Agriculture of the Dominion, and by the civic authorities. Also Messrs. W. C. Edwards & Co., the senior member of which firm has been for many years a member of the Dominion Parliament and an extensive breeder of pure bred live stock, have invited the Association to visit their breeding establishment at Rockland, Ontario. There is great enthusiasm among the veterinarians throughout the Dominion of Canada and they are looking forward with great delight to this opportunity to entertain their professional brethren and their friends from the United States and Island possessions. Also veterinarians outside of the border of the Dominion are glad to have this opportunity to make the American Veterinary Medical Association a fact as well as a name and anticipate great pleasure in visiting their sister nation upon the north and partaking of the far-famed hospitality and good cheer of its people. The weather of Ottawa is especially delightful at the time of year when our meeting is to be held, and thus, added pleasure will be given to the members and their friends in visiting the many places of interest for which Ottawa and its vicinity is noted. Ottawa is easily accessible from all parts of the home of our organization by railroads and steamship lines. The trip will make as pleasant a vacation outing as could be devised. It is expected that the Ottawa meeting can be made to far surpass any previous meeting both in numbers in attendance and in new membership secured. The Association now numbers about 500. It ought to be 2000. It will soon reach that number if each member will exert his influence to accomplish it. It is urged upon each member that he will use his personal influence with veterinarians of his acquaintance who are eligible to membership to make application for such membership. Also it is very much desired that each member who decides to attend the Ottawa meeting, will by personal interview and by letter picture to his fellow members the pleasure and profit to be obtained from attendance at the meeting. If all will join in earnest effort to make the Ottawa meeting a grand success, the most sanguine will not be disappointed."

THE ILLINOIS STATE VETERINARY MEDICAL ASSOCIATION.

The Association held its twentieth annual meeting in Exchange Hall, Union Stock Yards, Chicago, Tuesday and Wednesday, December 2d and 3d, 1902, and was called to order by the President, Dr. Joseph Hughes, at 10.30 A. M.

The following members and visitors were in attendance during the meeting : Drs. R. G. Walker, Joseph Hughes, D. S. Jaffray, Jr., C. F. Greinier, J. F. Ryan, E. L. Quitman, Jas. Robertson, G. A. Lytle, L. A. Merillat, A. H. Baker, Robt. Gysell, F. W. Buecher, Chicago ; N. I. Stringer, Watseka ; L. C. Tiffany, Albert Babb, Springfield ; J. F. Pease, Quincy ; Clarence Mills, Decatur ; W. F. Scott, Oak Park ; J. S. Hollingsworth, La Salle ; W. B. Lewin, Russell ; F. H. Barr, Pana ; W. H. Curtiss, Marengo ; R. W. Story, Princeton ; F. W. Kee, Sheldon ; Geo. B. Jones, Sidell ; H. A. Pressler, Fairbury ; J. M. Kaylor, Barry ; C. D. Maulfair, McNabb ; W. J. Martin, Kankakee ; W. C. Galbraith, Wheaton ; F. B. Rowan, Bellevidere ; J. H. Crawford, Harvard ; E. F. Beckley, Rockford ; Jas. Smellie, Eureka ; C. P. Draper, Arlington Heights ; J. T. Nattress, Delevan ; W. H. Welch, Lexington ; R. F. Hoadley, Yorkville ; Thos. P. Brankin, Joliet ; C. H. Merrick, Okawville ; J. S. Spangler, Aurora ; W. C. Hannawalt, Sheffield. Visitors :—Drs. H. W. Hawley, O. E. Dyson, Johnson, Redmon, Frost, Chicago ; G. S. Gates, Blandinsville ; Davis, Chicago. Also, Dr. Brimhall, of the State Experiment Station of Minnesota.

The minutes of the previous meeting were read and approved.

The President now delivered the annual address.

The following applications for membership were received, and on motion were duly elected : Drs. W. W. Welch, Elgin, (O. V. C.) ; W. C. Galbraith, Wheaton, (O. V. C.) ; Thos. P. Brankin, Joliet, (McK. V. C.) ; Chauncy D. Maulfair, McNabb, (C. V. C.) ; E. F. Beckly, Rockford, (C. V. C.) ; J. S. Hollingsworth, La Salle, (O. V. C.) ; W. H. Curtiss, Marengo, (C. V. C.) ; C. S. Hayward, Mattoon, (O. V. C.) ; J. M. Kaylor, Barry, (C. V. C.) ; F. W. Godsall, Chicago, (C. V. C.) ; D. S. Jaffray, Jr., Chicago, (C. V. C.) ; C. P. Draper, Arlington Heights, (McK. V. C.) ; F. W. Buecher, Chicago, (McK. V. C.) ; W. F. Scott, Oak Park, (Montreal V. C.).

The society then adjourned for luncheon.

At 2 P. M. the society reconvened and listened to a paper by Dr. L. C. Tiffany, of Springfield, on "The Mallein Test and Some Phenomena Observed in its Application." This was an excellent paper, and discussed at length by Drs. Pressler, Lewin, Stringer, Martin and Babb. Dr. Brimhall, of the Minnesota State Experiment Station, also kindly consented to make a few very timely remarks on the subject.

Dr. E. L. Quitman, of the Chicago Veterinary College, now read his paper, "The Therapeutics of Pyæmia and Septicæmia." This very interesting and instructive paper was discussed by Drs. Pease, Lewin, Stringer, Tiffany and Babb.

Dr. W. J. Martin, of Kankakee, now gave a very practical paper on "Veterinary Obstetrics."

The society now adjourned until 7.30, at which time the discussion was participated in by Drs. Quitman, Pressler, Pease, Mills, Stringer, Lytle, Babb and Nattress.

Dr. N. I. Stringer, of Watseka, now read his paper "Sclerostoma Tetracanthus." This very practical and interesting paper was discussed by Drs. Martin, Quitman, Mills, Welch and Smellie.

Dr. J. H. Crawford, of Harvard, read his paper on "Intestinal Antisepsis." Discussed by Drs. Quitman, Mills, Stringer and Walker.

A motion was now made and carried that the remainder of the meeting following the clinics be held at Chicago Veterinary College building.

Adjourned to meet 10 A. M. December 3.

At the clinic a very interesting lot of subjects were presented for inspection and operation. Drs. Hughes and Merillat kept the members interested with exhibitions of many different operations. The kind invitation of Drs. Baker and Hughes for luncheon was accepted, and a most enjoyable hour passed at the noonday meal.

At 3 P. M. the society reconvened and listened to a very excellent paper by Dr. A. H. Baker, of Chicago Veterinary College, on "Acute Pleurisy in the Horse." Discussed by Drs. Quitman, Stringer, Gyrell, Robertson, Lewin, Martin, Smellie, Pease and Babb.

The Auditing Committee reported the Treasurer's books as correct. The Treasurer's report showed a balance on hand of \$83.69. Bills for printing and Secretary's fees were allowed to the amount of \$23.65.

A motion was carried that the Secretary have 500 copies of the Constitution and By-Laws printed.

A motion was carried that our next meeting place be Champaign.

The election of officers for ensuing year resulted as follows:

President—Dr. H. A. Pressler, Fairbury.

Vice President—Dr. N. I. Stringer, Watseka.

Secretary—Dr. W. H. Welch, Lexington.

Treasurer—Dr. R. G. Walker, Chicago.

Board of Censors—Drs. J. F. Pease, Quincy; A. H. Baker, Chicago, and A. C. Worms, Chicago.

A vote of thanks was tendered Drs. Hughes and Baker for their hospitality.

Dr. Pressler then took the chair and appointed the following committees:

Programme—Drs. Albert Babb, Springfield; F. W. Kee, Sheldon, and J. F. Ryan, Chicago.

Arrangements—Drs. C. H. Merrick, Okawville, and J. T. Nattress, Delavan.

Legislation—Drs. E. L. Quitman, Chicago; Jas. Robertson, Chicago, and W. J. Martin, Kankakee.

Dr. E. F. Beckley favored the Association with a good song.

Society adjourned to meet at Champaign in February at the call of the President.

W. H. WELCH, *Secretary*.

VETERINARY MEDICAL ASSOCIATION OF NEW YORK COUNTY.

The December meeting was held on the evening of Wednesday, 3d, in the lecture-room of the New York-American Veterinary College, with the largest attendance of the year. President Robert W. Ellis occupied the chair, and Dr. Charles E. Clayton was at the Secretary's desk. The following members were present: Drs. Ellis, Robertson, Burns, O'Shea, McCully, Bell, Bowers, Ackerman, Grenside, Schroeder, Mangan, and Wm. Herbert Lowe (honorary), of Paterson, N. J. Visitors present: Drs. J. Payne Lowe, of Passaic, N. J.; Drs. Kelly, Shaw, Anderson, Howe, Morris, Critcherson, Serling, Krauss, and a number of students from the college.

Dr. James L. Robertson read a paper entitled "The Pathology of Infection," it being an abstract of a communication in the London *Lancet*, by Sir J. Burden Sanderson, Bart. The high position occupied by the author makes his conclusions authoritative and they embrace the most recent advances along the lines treated. The paper is published elsewhere in this

number of the REVIEW. It was listened to with marked attention, and while no criticism was indulged in, it brought forth some timely remarks with regard to the importance of the germ theory of disease and the advantages of the microscope to the veterinary profession. It was suggested that some bacteriological study be undertaken by the Association during the coming sessions.

Dr. Bell spoke of the recent communication of Prof. von Behring upon the immunization of calves from tuberculosis by means of human sputum, and suggested that at last we were in a fair way to have an agent which would prevent the development of the "white plague," and predicted that it will soon be as popular among young bovines as vaccination is among the humans. It also gives promise of leading up to an immunizing serum for the human race.

Volunteer reports of cases were asked for, and many of those present had something of interest to recite.

Dr. Mangan, of Westchester, earned the thanks of the Association for his report of a case of "Pseudo-Leukaemia in a Dog," exhibiting the thyroid, bronchial and inguinal glands, the spleen, the liver, and kidneys—all being very much enlarged. This brought forth many queries in reference to the clinical symptoms, a point of interest being that the mother of this dog had (judging by the history of the owner) died of the same affection five years previously. Another point was that all those present who had seen the disease in dogs had observed it in setters.

Dr. W. D. Critcherson, of New York, narrated some cases of fracture, while Dr. Ellis asked for a diagnosis in a peculiar manifestation of intermittent lameness, which recovered. His own opinion was that it was a case of thrombosis.

Then Dr. F. C. Grenside stirred the members up by asking for an expression of opinion upon the subject of luxation of the patella in horses. Almost every member and many of the visitors had had much experience with the condition and many held decided ideas upon its pathology and causation.

Following the discussions, which were closed off only on account of the expiration of the evening, the election of officers took place, which resulted in the reëlection of those who had served the Association the previous year. They are as follows:

President—Dr. Robert W. Ellis.

Vice-President—Dr. J. Elinor Ryder.

Secretary-Treasurer—Dr. Charles E. Clayton.

President Ellis appointed the following committees to serve for the ensuing year :

Board of Censors.—James L. Robertson (chairman), R. W. McCully, George F. Bowers, D. J. Mangan, and Wilfred Lellman.

Judiciary.—Arthur O'Shea (chairman), E. B. Ackerman, Theodore A. Keller, Robert Dickson, and David W. Cochran.

Programme.—Roscoe R. Bell and J. Elmer Ryder.

President Wm. Herbert Lowe, of the Veterinary Medical Association of New Jersey, extended a most cordial invitation to all present to attend the annual meeting of his association at Trenton on January 8, for which he received a vote of thanks, and quite a number signified their intention of being present.

For the January meeting, Dr. W. C. Miller, house surgeon of the American Veterinary Hospital, has agreed to give an exhibition of the X-ray machine upon pathological specimens and in other ways.

CHARLES E. CLAYTON, *Secretary.*

PASSAIC COUNTY VETERINARY MEDICAL ASSOCIATION.

The regular monthly meeting was held at 169 Paterson Street, Paterson, N. J., on Tuesday evening, December 2, 1902, with Dr. William Herbert Lowe, President, in the chair, and Dr. William J. Fredericks acting as Secretary. On roll-call the following members answered to their names : Drs. Anthony P. Lubach, Passaic ; John H. Degraw, Paterson ; J. Payne Lowe, Passaic ; David Machan, T. J. Cooper, William H. H. Doty, and M. A. Pierce, Paterson ; William J. Fredericks, Delawanna ; and William Herbert Lowe, Paterson.

The minutes of the November meeting were read and approved, on motion of Dr. J. Payne Lowe, seconded by Dr. Cooper.

The next order of business being "unfinished business of the previous meeting," the President reported that the certificates of membership had been printed as ordered at an expense of \$5, and that a number of the members already had their certificates, each paying fifty cents for the same, which from our nineteen members would bring into the treasury \$9.50, so that the Association was actually making \$4.50 by the transaction. On motion, the report was received and ordered entered upon the minutes.

Dr. Cooper was allowed to withdraw his "blacklist" proposition by unanimous consent.

Treasurer M. A. Pierce made the following report :

Receipts.

Sept. 16th.	Received from Dr. A. Machan, Secretary	\$16.00
Oct. 31st.	" " "	10.00

\$26.00

Disbursements.

Paid Guardian P. & P. Co's. bill for 200 letter heads ; 200 envelopes, 100 postal cards and 200 schedule of fee cards	\$9.75
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Paid the same company bill for 250 copies of By-Laws	9.75
Paid the same company bill for 50 certificates	5.00

\$24.50

Balance on hand	\$1.50
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It was regularly moved, seconded and carried that the Treasurer's report be received and spread in full upon the minutes.

The President then paid over to the Treasurer \$11.50, which had been paid to him since the last meeting for certificates and dues.

President Lowe read part of a letter from Dr. W. Horace Hoskins, of Philadelphia, managing editor of the *Journal of Comparative Medicine and Veterinary Archives*, in which the editor said that he noted "the continued interest of your members in the work of the profession, and trusts that it will continue with added power and influence."

The President reported that he had received a letter from Dr. Roscoe R. Bell, of Brooklyn, N. Y., editor of the AMERICAN VETERINARY REVIEW, advising him that the December REVIEW would contain the full reports of the last three meetings of the Passaic County Veterinary Medical Association.

The President then made the following announcements : Next meeting of the Passaic County Veterinary Medical Association, Tuesday evening, January 6th, 1903. Annual meeting of the Veterinary Medical Association of New Jersey, at the Trenton House, Trenton, N. J., Thursday, January 8th, 1903.

One of the most interesting and instructive features of the programme to practitioners would be a lantern slide exhibition and address on "The Etiology and Prevention of Infectious Diseases of Animals" by Prof. Veranus A. Moore, of the New York State Veterinary College, at Cornell University, an eminent authority on comparative pathology and bacteriology.

Meeting of the State Board of Veterinary Medical Examin-

ers at the State House, Trenton, N. J., January 9th and 10th, 1903, for the examination of candidates for license to practice veterinary medicine, surgery and dentistry in the State of New Jersey.

The members resolved to attend the State meeting at Trenton, on January 8th, in a body.

The Association then listened with much interest to the reading of a paper on the "Examination of Horses as to Soundness," by Dr. David Machan. A profitable discussion followed on several aspects of this important subject to horsemen and veterinarians. The Association gave Dr. Machan a vote of thanks.

The President appointed Dr. Fredericks essayist for the January meeting.

On motion, the meeting adjourned at 10.45 P. M.

WILLIAM J. FREDERICKS, *Secretary pro tem.*

THE VETERINARIANS OF NEW ZEALAND.

What is probably the largest Conference of Veterinary Surgeons ever held in the Southern Hemisphere took place on August 27th and 28th last, at Wellington, New Zealand, under the presidency of the Chief of the Veterinary Division of the Department of Agriculture, Mr. J. A. Gilruth, M. R. C. V. S. There were twenty-one members of the Royal College of Veterinary Surgeons present, also two other gentlemen holding colonial degrees; the subjects discussed being departmental matters connected with inspection under the Slaughtering and Inspection Act, the Stock, the Dairy Act, hereditary unsoundness in horses, and the general work of the division, all of which gave rise to interesting discussions, and several valuable resolutions were passed.

After the conference had broken up Mr. C. J. Reakes, M. R. C. V. S., Assistant Chief Veterinarian, presented Mr. Gilruth with a handsome gold watch, stating that a unanimous desire had been expressed by the members of the profession resident in the Colony to convey to him in some practical manner their appreciation of the scientific value of his services to the Colony and to the profession; and that this presentation it was desired should be regarded, not as emanating from the veterinary officers of a government department, but solely as from the members of the profession in New Zealand.

In reply Mr. Gilruth said he was bound to say in the first place that it was quite out of order for the members of a depart-

ment to make a presentation to their chief on such an occasion. He could not fail, however, to appreciate the good feeling which had prompted them to make a presentation to him of so handsome a gift, which he should always prize. He desired to thank them all for the assistance they had rendered him in the carrying out of the work of the department, of the investigations in which they had been engaged, and their cordial support on all occasions. He thanked them for their loyalty to himself, and trusted the good feeling which existed among them would always continue.

In addition to being the Chief of the Veterinary Division of the Department of Agriculture, Mr. Gilruth is pathologist and bacteriologist to the Department of Public Health, and to the New Zealand Branch of the British Medical Association. He was appointed Plague Commissioner during the outbreak of bubonic plague in New Zealand two years ago, and his work is very highly valued by the medical as well as the veterinary profession, his opinion being in constant request in pathological and bacteriological matters.

VETERINARY MEDICAL ASSOCIATION OF NEW JERSEY.

The annual meeting of this Association will be held at the Trenton House, Trenton, N. J., on Thursday, January 8, 1903, the session beginning at 10 A. M. At this meeting officers for the ensuing two years will be elected and reports will be read by special and standing committees.

Dr. James M. Mecray will present a paper entitled "Necessary Qualifications for the Production of Clean and Wholesome Milk."

Dr. Veranus A. Moore, of Cornell University, will give an address upon "Etiology and Prevention of Infectious Diseases of Animals."

Dr. Moore's address will be illustrated by means of the stereopticon, and cannot fail to prove instructive and entertaining to those attending.

GEORGE W. POPE, *Secretary.*

THE OHIO STATE V. M. ASSOCIATION

will hold its annual meeting in the Veterinary Department of the Ohio State University, January 13 and 14. The clinics will be held in the hospital connected with the University. All graduate veterinarians are invited and will be welcomed.

WM. H. GRIBBLE, D. V. S., *Secretary.*

NEWS AND ITEMS.

DR. J. D. COOPER, of Kansas City, Mo., has been appointed an assistant inspector, B. A. I., and assigned to Kansas City.

DR. WM. M. SIMPSON, of Malden, Mass., has entered the Chicago Veterinary College to take a special course in surgery.

THE prize Western steer "Shamrock," weighing 1805 pounds, was sold to a New York man for a holiday roast for his political friends.

DR. H. R. McNALLY, who has been on the Sheep Quarantine Division in the Western States, has been transferred to the Meat Inspection Division, B. A. I., Kansas City.

"I HAVE TAKEN THE REVIEW FOR FIFTEEN YEARS, and do not see how I could get along in my practice without it."—*(James S. Culbert, V. S., Portland, Indiana.)*

DR. GEO. M. GLOVER, instructor in veterinary science at the Colorado Agricultural College, Ft. Collins, Colo., was a visitor to the Chicago Live Stock Show in December.

EFFORTS will be made in both the Missouri and Kansas State Legislatures during their coming sessions to secure needed veterinary legislation.

ACCORDING to a news dispatch from Paris a regulation has gone into effect in Spain requiring the presentation of a certificate of good health by both parties to a marriage before a marriage license will be issued.

DR. E. B. ACKERMAN, of Brooklyn, N. Y., has been appointed by Governor Odell a member of the Board of Veterinary Medical Examiners to fill the unexpired term of Dr. F. L. Kilborne, of Kelloggsville, resigned.

DR. P. S. ISAACSON has succeeded to the practice of Dr. L. Van Es, at Mobile, Ala., the latter having accepted the chair of Veterinary Science at the North Dakota Agricultural College at Fargo, to which station he removed about Christmas.

DR. J. I. GIBSON, Denison, Iowa, late State Veterinarian, has been appointed a member of the State Legislature in the place of Hon. Hugh Langan, resigned. It will now be in proper form to address him as "Hon."

DRS. J. F. WINCHESTER, of Lawrence, Mass., and J. B. Paige, of Amherst, Mass., were in New York City Dec. 11, in attendance upon the annual meeting of the New York Alumni Association of Amherst College.

DR. J. W. CONNOWAY, of the University of Missouri, paid

Kansas City a visit in December. The Doctor has secured a Kansas City Veterinary College operating table for use in his class work at the University.

DRS. JOSEPH WINGERTER and J. H. Dellenberger, of Akron, Ohio, have just completed and occupied a large modern veterinary infirmary at the corner of Cedar Street and Orleans Avenue. There are departments for large and small animals, with ambulances for each.

DR. M. H. REYNOLDS, of Minnesota, visited the International Live Stock Exposition in Chicago *en route* to New Orleans, where he attended the meeting of the American Public Health Association as a member of the Minnesota State Board of Health.

A NOVEL CALENDAR.—The Denver Chemical Company, manufacturers of antiphlogistine, has sent to physicians and veterinarians a very unique calendar, illustrative of an original package of their well-known article, and being of service as a concise record of the flight of time.

DR. WILLIAM HERBERT LOWE, President of the Veterinary Medical Association of New Jersey, was the guest of Dr. T. Earle Budd, of Orange, New Jersey, on December 22d, at the annual dinner of the New England Society in commemoration of the landing of the Pilgrim Fathers.

DR. JAMES L. ROBERTSON, of New York, who attended the Minneapolis meeting of the A. V. M. A., visited his friend, Dr. Eugene Burget, of Ohio, and took in several of the county fairs of the Buckeye State, at one of which he officiated as a judge of equines. He returned to his home about Oct. 1, in the best of health.

SURGICAL SOAP SOLUTION.—M. Terrier (*L'Union Pharm.*) employs the following liquid soap for washing patients: White castile soap, 1 kilo.; soft soap, 1 kilo.; olive oil, 1 kilo.; water, 50 liters; naphthol, 25 G.; lemon oil enough to perfume. Heat the soap and oils together in the water for twenty-four hours at least, then add the naphthol and filter.

A NEW ANTHELMINTIC.—The methane of thymol (*Union Pharm.*) is put forward as a powerful anthelmintic, the alkaline contents of the intestines decomposing it into thymol and other compounds, the former acting in the direction indicated. It occurs in white crystals, of little odor and taste, and is very slightly soluble in water.

IN the great work of stamping out contagious pleuro-pneumonia from the United States by the Bureau of Animal Indus-

try—1887-1892—the veterinary force “inspected 1,605,721 cattle in 166,951 herds, made 356,404 necropsies, purchased 21,961 head of cattle, and disinfected 7,438 premises. 7,438 cattle were found affected at the necropsies.”—(*Law's Veterinary Medicine.*)

DR. REPP APPRECIATED.—The *Bulletin* has observed with much interest the enviable position taken by John J. Repp, V. M. D., of the Experiment Station, Ames. He is making a fine record for himself and for the State as a thoroughly equipped and highly scientific veterinarian. The greatest fear we have is that Iowa will not be able to retain him. He will be called higher.—(*Iowa Health Bulletin.*)

THE RESULT OF EXTIRPATION OF THE PITUITARY BODY IN ANIMALS.—In an effort to acquire a more exact knowledge of the pathology of acromegaly Friedman (*Berliner Klin. Wochenschrift*, May 12, 1902), excised the pituitary body in several cats and kittens, but he was unable to demonstrate that the total extirpation of this body exerted any influence over the functions, growth, or development of the animals.

“WITH not far from three thousand million dollars’ worth of farm animals in this country, and with a single disease that sometimes destroys a hundred million dollars’ worth of property in a year, it is not difficult to see the value of that precise knowledge which is required to deal promptly and efficiently with these plagues.”—(*Extract from Dr. Salmon’s Introduction to Prof. Moore’s new work, “The Pathology of Infectious Diseases of Animals.”*)

DR. CHARLES W. SHAW, veterinarian, of New York City, obtained a verdict last month against the city for \$2500 in a suit over injuries sustained two years ago, when a runaway horse belonging to the Street Cleaning Department knocking him down, causing partial deafness. He was represented by Coleman & Coleman, they being his father-in-law and sister-in-law. The case was stubbornly fought by the Corporation Council, and much evidence was submitted.

IMMUNIZING HOGS.—Dr. W. E. A. Wyman, of Portland, Mich., writes under date of Dec. 18: “Just got back from Mastin, Kansas, where I immunized the most valuable herd of Poland Chinas in the world, belonging to Winn & Mastin. Results immense; never lost a case of swine fever of the grown ones and saved over 50 per cent. of sucklings in age of 5 to 14 days. This is a boon to the profession. I employed De Vaux antitoxin.”

DR. NELSON P. HINKLEY, who has been located at Atlanta, Ga., for the past three years, has returned to the scene of his former labors in Buffalo. The change was necessitated through the ill-health which Mrs. Hinkley experienced in the South.

PECULIAR ACCIDENT.—A well-trained English pointer, the property of Mr. — Wilder, Kansas City, Mo., met with a rather unusual accident while out on a hunting trip recently. Through miscalculation the dog was forced to jump from an overhanging ledge to a roadway below, a distance of about 30 feet. As the result of this jump both olecranon processes were fractured. The fracture of the right one extending from the articulation downward and backward obliquely. The left one was shattered into several fragments. This accident completely incapacitated the dog for locomotion. Efforts to transfer its weight to the anterior limbs caused the dog to pitch forward onto his head. The case being a hopeless one owing to the nature of the fractures and the complete inability of the animal to go about, the dog was destroyed. Inquiry led to the information that numerous dogs as well as deer and other animals had jumped from this same precipice to the road below without apparent injury.

CARBOLIC ACID IN TETANUS.—J. E. Musgrave, M. D. (*Merck's Archives*) avers that the Bacilli treatment of tetanus by hypodermic injection of carbolic acid ranks with that of antitoxin in diphtheria. It transposes the very high percentage of mortality to that of recovery. It places a horrible, agonizing and fatal disease promptly under control, and he adds the report of one more successful case to the thirty-four previously on record. The penetrating wound in the foot of this patient had completely healed, after which tetanic symptoms developed, culminating in intense rigidity of the muscles. He began at once to give 1.2 grains of carbolic acid in a 2 per cent. solution every four hours, or 7.2 grains daily, hypodermically. The rigidity in general was lessened on the third day, but a few sharp exacerbations returned once daily. The treatment was kept up for two weeks without even cloudiness of the urine or a single untoward symptom until the patient had not the slightest symptom of lock-jaw, and was able to walk around.

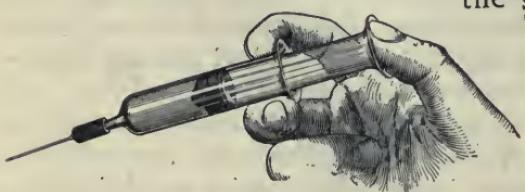
SHOULD JUDGES TAKE COGNIZANCE OF HIDDEN UNSOUNDNESS IN SHOW HORSES?—At the recent National Horse Show the judges of heavy harness horses, it is said, established a precedent which not all authorities would care to see followed. Among the entries in one of the competitions was a high stepper that had been "nerved" for navicular disease and was con-

sequently unsound. The animal did not show it in the least, however, going perfectly sound and so brilliantly that two of the judges were ready to give it the blue ribbon, when the third judge, who happened to know all about the animal, disclosed the facts, with the result that instead of getting the blue ribbon, the handsome high stepper got the gate. Among horsemen who knew of the occurrence the decision of the judges gave rise to quite a spirited argument, many maintaining that the officials erred in taking cognizance of a hidden defect which did not appear in the show ring and which was, according to these critics, a matter for the veterinarians, not the judges, to pass upon.—(*New York Herald*.)

A NEW DEVICE FOR THE FURNISHING OF ANTITOXINS AND CURATIVE SERA.—An improvement in the package in which antitoxin and the various curative sera are furnished, has been introduced by the H. K. Mulford Company, Philadelphia,

by which the antitoxin is furnished in the barrel of an aseptic glass syringe, hermetically sealed. The advantage of this container is immediately apparent to the profession, since it not only presents each dose of antitoxin in a perfectly aseptic syringe, but prevents the possibility of infection in administering antitoxin through an imperfectly sterilized syringe, and, furthermore, it obviates any uncertainty in the working of the ordinary piston syringes. The cut describes the style of the package containing the serum. The barrel of the

syringe contains the antitoxin. In using, the physician breaks the sealed tube at point (4), by placing the thumb and the first finger of the



right hand immediately over the etched line and pressing the finger and thumb slightly together, a little more pressure being exerted towards the end than towards the barrel of the syringe.

The needle is then taken from the sterile glass plunger and the rubber tubing (11) applied with a slight rotary movement over the fractured end of the syringe. The cap and paraffined cork (6) is then removed from the glass barrel of the syringe and the plunger used as indicated in the illustration. The plug (2) not only serves to retain the serum in the barrel of syringe, but also serves as a washer, and the plunger (7) is pressed against it to expel the antitoxin. This package has an especial advantage, in that the serum never comes in even momentary contact with the outside air, and the needle, plunger and syringe are all thoroughly sterilized, ensuring an aseptic injection. With this device it is not possible to inject air into the patient, and contamination of the serum is impossible.

FAITH TREATMENT FOR A COW.—*Buffalo, Nov. 27.*—An earnest citizen complained to-day at the Black Rock police station that his neighbor, Mr. Thompson, had left his sick cow unsheltered in a lot and had refused to get a veterinarian for it. The police summoned Thompson, who explained that he was a Christian Scientist. The desk sergeant was sceptical as to the effect of Mrs. Eddy's teachings on a cow, seeing that the cow could not think. "Be patient," said the owner, "and with a little more time, I will bring the cow up again to the height from which she has fallen. My cow had been very unruly before she was led into this false belief of sickness, and I decided that severe measures would be necessary. I have been watching almost continually out there in the lot for several nights and subjecting her to the soothing influence of our faith. Now she is much more docile than ever." A policeman was sent over to take a look at the cow and he reported that the "docility" appeared to him like the exhaustion which precedes death, so Capt. Potter sent for a veterinary surgeon, who ordered a stable and some medicine for the cow, the owner meekly protesting that his beast had nothing but a "false dream."

WORK OF THE BUREAU OF ANIMAL INDUSTRY.—From advance sheets of the Report of the Secretary of Agriculture, we glean the following brief synopsis of the work performed by the Bureau for the past year: "Under the inspection service of the Bureau of Animal Industry ante-mortem inspections for the year aggregate nearly 60,000,000, at a cost of a fraction over one cent each. The number of post-mortem inspections was nearly 39,000,000. The meat inspection stamp was affixed to over 23,000,000 packages of meat products, and the number of certificates of ordinary inspection issued for meat products for export,

exclusive of horseflesh, was 32,744. The quantity of pork examined microscopically and exported exceeded 33,000,000 pounds. Altogether the value of exports of animals and animal productions for the year amounted to \$244,733,062. The clearances of vessels carrying live stock was 837, and the inspection of these vessels has reduced the percentage of loss in ocean transit to 0.13 per cent. for cattle, 0.89 per cent. for sheep, and to 0.65 per cent. for horses. . . . There were inspected and admitted from Mexico over 65,000 cattle, and fully 6,000 sheep, lambs and goats. Importations from Canada of cattle numbered only 27,716. We imported from that country 148,313 sheep. The strictest quarantine is maintained at the ports on the sea-coast in order to prevent the introduction of animal plagues. In addition to cattle and sheep there were quarantined, animals of various species for menageries and zoölogical parks. The Department veterinarian stationed in Great Britain treated with tuberculin all cattle over six months old destined for export to the United States. Of 1,067 cattle so treated, 139 were rejected. . . . The Bureau of Animal Industry has continued its investigations in contagious diseases with a view to their prevention or remedy. Over one and one-half million doses of black-leg vaccine were distributed during the year. Reports show that its use reduced the loss of cattle to 0.51 per cent. of those vaccinated. The use of this vaccine has thus saved to stock raisers many thousands of head of cattle."

LORD MACAULAY SAYS: "EVERY CLINICIAN BECOMES AN HISTORIAN."—Lord Macaulay briefly epitomized history as the "Record of Events." Be it so. The pleasant task of collection and verification of data falls upon the historian, who retells in an interesting and enthusiastic manner the lives and acts of others. In medical history as in secular the value of an epoch often rests upon the work of the individual, and the true portrayal of one incident in life lends color to the complete narrative. Acts not words illustrate the advance of progress in science and literature. The desire of one person to know precisely why another individual preferred certain methods to old-established forms necessitated history. The narrator of the events of daily life is the true historian and produces items of interest worthy of future history. The construction of records from this material constitutes the validity and worth of the article. What you do and tell to-day, if approved, your fellow man will perform to-morrow. Therefore the discovery of an aid to the burden of work-a-day life is more important than determining a

new chemic element. One helps the masses; the other invites speculation from the few. History thus recites incident. Incident depicts facts, and facts destroy theories, as the following abstract convincingly states:—"We had here a most formidable state of things to deal with: A woman in child-bed, with every indication of septicæmia—a double pneumonia, probably of septic origin, with constant pain in hip and lumbar region, with persistent vomiting and diarrhoea, temp. 105 degrees. A large tympanitic abdomen, small wiry pulse, cyanosis with finger nails quite purple. Dr. Tibbetts several times informed me that I could look for a fatal termination, so extreme was the case.

. . . . the best thing to do was to curet, which was done, and followed by hot bichloride douches. . . . no abatement in temperature. Morphine had to be given hypodermically to comfort patient, besides strychnine, cactus, brandy, and digitalis to support the heart's action. Just here I must say that I administered anti-streptococcic serum with very gratifying results. We also used injections of salt solution. I believe the benefit from these injections was more lasting than from those of serum. Antiphlogistine was applied over hip, lumbar nerves and sciatic nerve. This agent (antiphlogistine) was our mainstay in the treatment of both lungs besides. The abdomen became as large as before confinement, hard and resonant on palpation. Antiphlogistine was therefore spread all over the abdomen. I know of no preparation that has been brought to the attention of the profession of late years deserving of higher praise in all inflammatory conditions, no matter in what locality such may be seated. Poultices have been abandoned by the writer since the adoption of its use. Puerperal Septicæmia Complicated by Septic Double Pneumonia. Abscess of Thigh.—Recovery."—(C. C. PARTRIDGE., M. D., in *American Surgery and Gynecology*, October, 1902.) Had it not been for antiphlogistine, what would have been the result of the case? Again, had it not been for antiphlogistine, what pleasure would the attending physician have taken in making a public record of his case? The inference is marked. Here is a patient *in extremis* with the entire 900 official remedies of the Pharmacopœa at the disposal of consultant and attendant. Every surgical and medical accessory available, and yet one pharmaceutic preparation proves adequate to the emergency. Demonstrating beyond criticism that antiphlogistine should be applied in every process of inflammation. That antiphlogistine relieves blood pressure tension by induction of osmosis and dialysis.

PUBLISHERS' DEPARTMENT.

Subscription price, \$3 per annum, invariably in advance; foreign countries, \$3.60; students while attending college, \$2; single copies, 25 cents.

Rejected manuscripts will not be returned unless postage is forwarded.

Subscribers are earnestly requested to notify the Business Manager immediately upon changing their address.

Alex. Eger, 34 East Van Buren St., Chicago, Ill., Veterinary Publisher and dealer in Veterinary Instruments, Books, and Drugs, is the authorized agent for the REVIEW in Chicago and the Middle West, and will receive subscriptions and advertisements at publishers' rates.

YOU KNOW IT ALL; but can learn more by looking at the bottom of page 6 (ad. dept.). This product, which is pronounced nearly as the first four words in this notice, but spelled differently, will be interesting to veterinarians having many dogs under their care, as no class of animals has so much skin trouble.

THE TABLES ARE TURNED over to you at a reduced price for a limited time, as is explained to you by Dr. Milnes in his advertisement on page 6 (ad. dept.), and those who need a table would do well to communicate with the Doctor at once, as the number is limited.

THE "TWENTIETH CENTURY DENTAL FLOAT" is attracting the attention of progressive veterinarians everywhere, as it is the first *real advancement* in VETERINARY DENTISTRY over the old hand floats. See page 16 (ad. dept.).

MAX WOCHER & SON'S new cuts in their ad. on page 18 (ad. dept.) are suggestive of two very important ends of the veterinarians work, and this house has instruments and appliances to meet every end.

"I AM very much pleased with Zenoleum. It was only yesterday that it showed its power to me as an internal antiseptic in a case of acute indigestion. After tapping three times to remove the gases formed by the fermenting food, the intestines having been filled again, I gave two ounces of Zenoleum in capsules with the result that my patient was soon relieved and eating hay."

F. R. WHIPPLE, V. S., Kewanee, Ill.

THE BOLTON DRUG Co., whose ad. appears on page 7 (ad. dept.), have everything that the veterinarian needs; not only veterinary supplies in general, but such specialties as Mallein and Tuberculin, always on hand. And their prices are right.

REVIEWS WANTED.

The Publishers will pay 25 cents a piece for any of the following: January and April, 1901; January and February, 1902; December, 1899; September, 1898; and March, 1896; and 50 cents a piece for September and October, 1900. Address: ROBERT W. ELLIS, D. V. S., Business Manager, 509 W. 152d Street, New York.

American Veterinary Review

Journal

AMERICAN VETERINARY REVIEW.

FEBRUARY, 1903.

All communications for publication or in reference thereto should be addressed to Prof. Roscoe R. Bell, Seventh Ave. & Union St., Borough of Brooklyn, New York City.

EDITORIAL.

EUROPEAN CHRONICLES.

PARIS, December 15, 1902.

BROKEN KNEES AND SADDLE SORES.—Although some special autoplastic measures have found their application in veterinary surgery, such as chirtoplasty and keratoplasty, there are others which are yet either only under consideration, or, again, have remained ignored. And, yet, if one will consider a moment, there are many cases where autoplastic interference is indicated.

To speak of one, which has in France made great progress in later years, I will mention that which has been made known by Mr. Vinsot, the inventor of the reversible operating stock, which our readers know. This treatment was introduced against ugly cicatrices of badly broken knees, so as to remove them, and hence increase the market value of the horse. It is simple : consisting in the removal in the front of the knee, by two more or less curved incisions, of a piece of skin, melon-slice shape, with the cicatrix in centre and the edges of the new-made wound closed with sutures. The knee being afterwards wrapped into an immovable dressing, this is left in place for a length of time sufficient to insure complete and firm union. Of course, all the various steps of the operation must be carried out under the most strict antiseptic attentions.

The result is certainly grand. Knees that had large ugly blemishes, broad hairless cicatrices, etc., are, after the Vinsot

treatment, left with only a single straight line, which is covered with hairs, is hardly perceptible, and certainly depreciating very little the value of the animal.

Such is the first result, which was expected. But it seems that there is another, which is pathologically more important.

A military veterinarian (Mr. Guerruan) tells us that in investigating the indications for the Vinsot treatment, he has found that the ugly blemishes were not superficial only, but that in their formation, in the mode of cicatrization of the wounds of the knee, there occurred cicatricial adhesions, which took place between the skin and the tissues underneath, and that those adhesions were the direct cause of the repeated falls of horses having broken knees, because of their interfering with the play of the joint.

Conclusion : In applying the Vinsot treatment one will remove cicatricial adhesions as well as the ugly blemishes, and the result will be removal of the cause of repeated falls, and increased value of an animal, which will then be able to render greater and longer services.

The investigations of Mr. Guerruan were made for another object, viz. : the propriety of autoplastic treatment of those wide and ugly wounds and cicatrices produced by harness, saddles, etc., which are so common in cavalry horses, and in many points are very similar to those accompanying broken knees. Here the market value, as far as ugly appearance, may not be as important ; but the repeated disabled condition of animals carrying such cicatrices because of irritation on the cicatricial tissue, is not to be overlooked. And, again, if one carefully examined the deep structures underneath it and noticed the condition of cicatricial adhesions, the similarity is yet more evident.

Cicatrices, of broken knees, are amenable to treatment by autoplasty, according to Mr. Guerruan. Cicatricial blemishes resulting from harness, saddles, etc., are also, and the result will be as great, viz. : relief from trouble which may disable an animal for a variable length of time at any moment. Remove the

cicatricial surface, under strict antiseptic cares, in the centre of a melon-sliced incision, bring carefully and neatly the edges together with sutures, protect the wound with an antiseptic dressing and a similar result will be obtained; a single linear cicatrix well covered with hairs and in the centre of a skin moving freely over the tissues underneath.

This new application of autoplasty may yet be wanting the control of long experience, but still has done well. The inventor has operated on 40 animals, and in all has obtained a radical recovery in a few weeks, none of them afterwards have been disabled again because of swelling or irritation of old saddle galls, stickfasts, or the like. He has just avoided the premature reform of a number of cavalry horses which unoperated would have been almost useless for their work.

Perhaps some of our American *confrères* in the Army will try autoplasty also.

* * *

TUBERCULOSIS.—The question of the unicity of bovine and human tuberculosis is not yet near a decision, and it is most likely that notwithstanding the rumors that the next Congress on Tuberculosis will see the question settled, it is probable that it will not. In the meanwhile observers are at work, experiments are made, and facts are daily accumulating either in scientific papers or before scientific bodies, which tell of the earnestness with which the researches are carried out.

Indeed, let us open any medical paper, and it is upon articles on tuberculosis that our attention is called. In the *Munch. med. Wochenschrift* for September, Max Shottelius records a series of experiments that he has made on the transmission of tuberculosis to bovines in feeding them with human sputa. He experimented on one cow and two calves, giving them 50 grammes of sputa each, which they took in twenty-four meals in the space of three months. The cow took mesenteric and enteric tuberculosis. In the calves only a few mesenteric and sub-maxillary glands were affected. In all three the bacilli of Koch were found. Witnesses were healthy. Shottelius con-

cluded from this experiment the statement of the unicity of the two tuberculoses.

Then in the *Deutsche medicin. Woch. of October 2d*, A. Moeller publishes that he has fed two calves, free from disease, for four months with 10 c.c. of tuberculous sputa every day, and that neither seemed to have the slightest indisposition, that they kept putting on fat, and when killed they were found free from any tuberculous lesion. Naturally here is a different conclusion from the above.

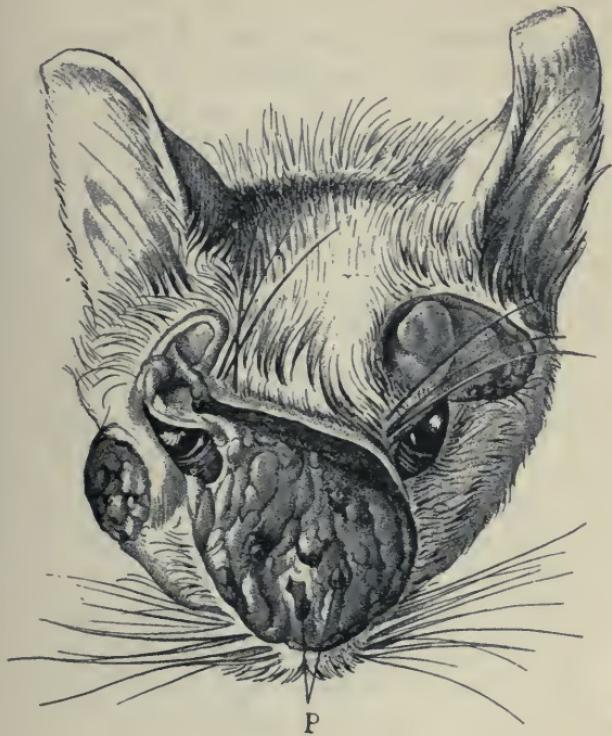
And now I read in the *Semaine Medicale*, the brief *résumé* of a case of transmission to man, by accidental inoculation of bovine tuberculosis, which is itself reinoculated experimentally and successfully to a calf. This record is made by Drs. Spronck and Hoefnagel, of Utrecht. Truly the inoculation to the man gave a localized affection, but yet the result has its value, and again the corresponding cubital gland was diseased, and the patient, although suffering with cough and having dullness of the apex of the right lung, had not presented tuberculous bacilli in his expectorations.

While speaking of this long agitated question, I might also mention the conference which I had the pleasure to hear from Prof. Nocard on the second series of experiments which he has made under directions of the Société de Médecine Vétérinaire Pratique. But it was too interesting and of too important value to curtail it. I preferred to send it in full and it will be found elsewhere in this number, and our readers will be able to form their own ideas and draw conclusions. It is certainly difficult to deny the weight that the results of those experiments carries, or to imagine what contrary arguments can be brought against them.

* * *

And, always on the subject of tuberculosis, I may be here permitted to send our friends a plate illustrating a case which Prof. Petit has presented lately at the Société Centrale, a case of *tuberculous ulcerations of the face*, which the author prefers to the name of *lupus*, commonly in use for such trouble. The

head is that of a cat, which had died in an extreme state of emaciation, because of tuberculosis.



At the autopsy there was only *pulmonary granulia*, no lesions of the tracheo-bronchial glands, and the ulcerations on the face—all constituting the only post-mortem lesions of tuberculosis. The face was literally eaten up with deep ulcers, occupying the nose, the cheeks, the eyelids and extending to the right ear. The superior wall of the nasal fossæ is gone in two places, the turbinated bones are exposed (P). The subglossal and retro-pharyngeal glands were hypertrophied, yellow and granular on sections. Pus taken from the surface of the ulcerations contained an enormous number of tuberculous bacilli, which were also found in the glands and the miliary deposits in the lungs. These lesions are reported as comparatively rare.

"LES MALADIES MICROBIENNES" (MICROBIAH DISEASES).—It has been our pleasure on several occasions to allude to a unique French book, written by Prof. Nocard and Prof. Leclainche, and published by the house of Nasson & Co., here. To-day we cannot refrain from referring to it again, as we are receiving a copy of the third edition, entirely rewritten and considerably enlarged. "Les maladies Microbiennes" (Microbian Diseases) has just been issued. Those in 1896 who read the single volume of that issue will easily recognize the differences that exist between it and the two volumes of the work of to-day. This new edition has been the object of an entire revision, and, as the publishers remark in their little notice, all the chapters have been changed and the original text can scarcely be found in the new pages. Science has made great progress since the first edition, and the authors are too hard workers and investigators not to follow them, to contribute to them and record them. Numerous new subjects have then been introduced in the third edition, and much space is given to the pasteurellose of horses, typhus of dog, pasteurellose of calves, equine and aviary pest, pseudo-tuberculosis, actinobacillosis (to which I made allusion in one of my last chronicles). And, then, again, the diseases due to haematozoa have also found space in the new edition, the piroplasmoses and the trypanosomes. Yet, the general character and arrangement of the book have remained about the same. "The authors," say the publishers, "have this time again given us a complete synthetic and documentated study of animal infections, treated altogether to the point of view of clinic, of etiology, experimental study and prophylaxy." There is no doubt that an enormous quantity of work of experiments has been going on for the last few years, and in "Microbian Diseases" Profs. Nocard and Leclainche have resumed all that has been done, studied and discovered to this date. The work is concisely written, relieved of many technical points of laboratory investigations, and constitutes a valuable addition to French veterinary and scientific literature. We hope to be able at an early day to say something more in relation to the parts of the book

which treat of the pasteurelloses, the piroplasmoses and the trypanosomes.

A. L.

THE CAMPAIGN AGAINST FOOT-AND-MOUTH DISEASE.

The work of eradicating this newly-imported disease from American soil is progressing with much energy and with satisfactory results. In its January number the REVIEW outlined the methods adopted by the Bureau of Animal Industry by republishing its instructions to its inspectors, as well as a circular issued to the public. At the same time we were enabled, through the kindness of Dr. Salmon, Chief of the Bureau, to present our readers with his estimate of the situation, together with some remarks upon the probable origin of the outbreak. While we have received many news items and letters from correspondents as to the progress of the work, we have preferred to ask Dr. Salmon to furnish the account of the work being done, with any impressions of the subject which he might be pleased to present to the profession through the REVIEW. He has replied to our request in a very full and interesting manner, and we subjoin his letter in full:

U. S. DEPARTMENT OF AGRICULTURE,
BUREAU OF ANIMAL INDUSTRY,
NO. 147 MILK STREET, BOSTON, MASS., Jan. 22, 1903. } }

Editors American Veterinary Review:

DEAR SIRS:—The work of eradicating foot-and-mouth disease in the New England States by the slaughter of diseased animals and disinfection of the premises has progressed very satisfactorily, although not quite as rapidly as was anticipated. All diseased animals in Vermont have been killed and the carcasses disposed of, and all the premises there have been disinfected. In New Hampshire the same is true. In Rhode Island all diseased animals have been killed and about half of the infected premises have been disinfected. In none of these three States has there been any newly infected herd discovered in the last thirty days.

In Massachusetts the condition is not so favorable. The contagion was much more widely spread; there has been a foolish opposition on the part of some of the people, including a few veterinarians; the work

of the Federal Government has been embarrassed and hindered, and new herds are still becoming infected. It appears, however, that in by far the greater part of the infected district there has been no recurrence of the disease since we finished killing the first infected herds. In one section of the State, however, new herds have continued to become infected. We killed a very fine newly-infected herd last Saturday, January 17, which consisted of 109 animals, and we have another herd reported to-day. I think we shall soon be able to stamp out the contagion, but whether there will be any recurrences of the infection after new herds are taken upon the infected premises we will not know definitely until Spring.

The following table shows the number of herds and the number of animals purchased and slaughtered by the United States Department of Agriculture in the several infected States, up to date:

<i>State</i>	<i>Herds</i>	<i>Cattle</i>	<i>Swine</i>	<i>Sheep and Goats</i>
Massachusetts	111	2,283	202	47
Vermont	14	335	54	74
Rhode Island	4	75	8	—
New Hampshire	4	37	—	—
<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
Total	133	2,730	264	121

In addition to the animals covered by the table there were in Massachusetts 30 other herds, containing 403 cattle, and in Rhode Island 13 other herds, containing 292 cattle, which had the disease but which were supposed to have entirely recovered from it before we were prepared to slaughter them. The total number of diseased herds from the beginning of the outbreak to the present time, so far as known, is therefore, 176, containing 3,425 cattle.

Disinfection is proceeding as rapidly as possible in Massachusetts, but it will be some time yet before all the premises can be treated, as it is comparatively slow work.

We expect to succeed in stamping out this outbreak, and feel that the most serious danger is now past. If we had the cordial coöperation of every one in the State, as we should have, we should feel that the country at large would have little to fear from now on. But as it is, I feel that one could easily make the mistake of being overconfident.

Very respectfully,

D. E. SALMON, *Chief of Bureau.*

“ NON NOBIS SOLUM.”

State pride is always an admirable and a commendable feature of journalism, whether representing the domain of the daily

newspaper or a scientific specialty publication ; but when it assumes such proportions that all things lacking the ear marks of that particular commonwealth are so far below the "standard" that they "really don't amount to much," the effect becomes ludicrous. Our friend who edits the *Journal of Comparative Medicine* takes a pardonable and just pride in the profession of the Keystone State, and with good reason, for no State in this Union has more devoted and progressive veterinarians, no better veterinary associations, none with better laws, nor laws that are more rigidly enforced. All this is conceded with pride and pleasure. But our friend seems to overlook the fact that there are other States in this glorious Union, and that in some of these there are men engaged in the pursuit of veterinary knowledge who are just as earnest, just as self-sacrificing, and possessing just as deep sulci in their cerebrums as though they did not dwell outside of the favored boundaries of the State which has the privilege of claiming the *Journal* as its own. The Empire State, which has always stood in the front rank when opportunity offered for the advancement of our science and our art, seems to be the red flag for the Philadelphia bull, for scarcely a number of that publication makes its tardy appearance, which does not contain some sarcastic reference to the profession of New York, particularly its State society and its statute laws. The issue for November is a fair sample : It contains two editorial articles—one glorifying the accomplishments of Pennsylvania veterinarians (which we are glad to reëcho), the other castigating those of New York State for errors of omission and of commission. We imagine that the only veterinary thing in the latter State which it will acknowledge to be better than that of Pennsylvania is its monthly periodical, and as it still carries at its masthead the stereotyped legend "Leads Veterinary Journalism in America," it may even fail to concede that much to the Excelsior State. If, however, the status of the profession here is to be gauged by this kind of reasoning, it can have no fault to find with the entire proposition. The *Journal* should not be taken seriously. It is doing itself an injustice, and we are un-

willing that the profession should judge it in this narrow false light. Its editor's record is too full of glorious accomplishments to be dimmed by such pessimisms.

THE GRAND RAPIDS VETERINARY COLLEGE has this month made a slight change in its advertisement on page 16 of the advertising department of the REVIEW. The slight alteration consists in the addition of one single line, which reads as follows : "*Governed by the rules of the A. V. M. A.*" That is a change which is more welcome than any which it could have made, and one which will be of much benefit to all concerned—the profession, the college, and the country. Next !

MINNESOTA HOG CHOLERA CRUSADE.—The Veterinary Department of the State Board of Health will enforce the laws requiring all cases of hog cholera to be reported, all dead animals buried, and forbidding farmers to allow animals infected with contagious diseases to run at large. A farmer in the southern part of the State was prosecuted this week on the three charges and fined. The fine for failure to report the presence of hog cholera is from \$25 to \$100, for failing to bury hogs which die of cholera, \$10 to \$100, and for allowing infected animals to run at large, \$10 to \$100.—(*Pioneer Press, St. Paul.*)

VERATRUM VERIDE IN PNEUMONIA.—The fundamental law of action and reaction is often responsible for the revival of abandoned methods and remedies. Thus the time seems to have arrived (*Merck's Arch.*) for veratrum veride to participate in a resurrection. Its therapeutic value in toxæmic conditions has lately been brought to our notice by Dr. Isham. Now Dr. R. C. Atkinson speaks with conviction of its efficacy in pneumonia. He has used it for a period of many years and found it a superior remedy. Under its administration the distressing symptoms of pneumonia, such as cough and pain, are greatly relieved, the pulse softened and slowed, and the period of illness much shortened. No untoward effects on the heart were observed by the author. The preparation employed was Norwood's tincture. I have used the fluid extract of veratrum veride for several years in the treatment of equine pneumonia and have always found it to be of much assistance in the early stages of the disease.—(*W. J. Martin.*)

ORIGINAL ARTICLES

HUMAN AND BOVINE TUBERCULOSIS.

RESULTS OF THE EXPERIMENTS MADE TO COMPARE THE EFFECTS OF TUBERCULOUS BACILLI OF BOVINE AND HUMAN ORIGIN ADMINISTERED BY THE DIGESTIVE CANAL TO MONKEYS.

CONFERENCE MADE BEFORE THE SOCIÉTÉ DE MÉDECINE VÉTÉRINAIRE PRATIQUE, BY E. NOCARD, OF ALFORT.*

At the meeting of April 9th, 1902, the Société of Médecine Vétérinaire Pratique decided to have a new series of experiments on monkeys, to compare the effects of the ingestion of tuberculous products obtained from man and from bovines.

I have the honor to present you with the results :

April 14 I received from Anvers, where they had arrived on the 8th inst., six monkeys of the same breed (*macacus rhesus*) and about the same weight.

These monkeys were placed two by two in three large metallic cages, numbered and kept in separated rooms.

Those of cage III (Nos. 12 and 13) were drawn and designated to serve as witnesses ; those of cage I (Nos. 8 and 9) were to partake of the human tuberculous food ; those of cage II (Nos. 10 and 11) to have the bovine.

The experiment was begun on Saturday, April 19, consisting in giving every week to each monkey of cages I and II, an even quantity of tuberculous bacilli, human for cage I, bovine for cage II, mixed with their prepared food—cooked rice in sugared boiled milk.

Each monkey of the experiment made in this way 10 infecting meals ; in the four first meals, there were for each monkey five centigrammes of bacilli taken from a culture on glycerinated potato ; in the last six meals, the dose of bacilli was raised to 10 centigrammes.

* Translated from the *Presse Vétérinaire*, by A. LIAUTARD, M. D., V. M.

The bovine culture was similar to that used in the preceding experiments;* it was obtained in 1896 from direct inoculation of the pulp of a tuberculous udder, and kept up since in artificial media.

The human bacilli came from sputa inoculated to a guinea-pig on May 24, 1901; the spleen of this animal, inoculated June 20 on glycerinated potato, gave a culture which has been since kept up in liquid and solid media. This culture is very virulent to guinea-pigs and rabbits; inoculated through veins in weak dilution, it has quickly killed sheep, goats and young pigs. Calves and cows inoculated with the same solution, either in veins or in the udder, have resisted.

RESULTS.

April 29, one of the witnesses (No. 12) is found dead; he had diarrhoea since a few days, and had shown violent colics the day before.

At post-mortem, the animal is found entirely free from tuberculosis. All the viscera, lungs, liver, spleen, lymphatic glands, are perfectly healthy. The large intestine is studded with nodosities, dark in color, a little smaller than a hempseed; by squeezing them a little greenish, thick and sticky pus oozes out on the surface of the mucous membrane, in which by microscopic examination, under low power, a sclerostoma is detected, belonging to a species which has not been made out. It is probable that these parasitic lesions are not stranger to the diarrhoea which preceded death.

* * *

May 15, one of the monkeys of cage II (No. 10), bovine tuberculosis, is found dead. For the last two days he looked sick and had a little diarrhoea.

Post-mortem showed that death was due to invagination of the small intestine. In this monkey also there was on a level with the cæcum and colon a great number of greyish nodosities, surrounding the whole thickness of the canal, opening on the

* See AMERICAN VETERINARY REVIEW, Vol. XXV, pages 251, 318, 419.

surface of the mucous membrane and each containing a sclerostome. A few similar nodosities existed in the thickness of the omentum. This monkey had had four infecting meals, and had received in each five centigrammes of bovine bacilli. It was interesting to know if he had already tuberculous lesions. The lungs, liver, spleen, and mesenteric ganglions were entirely normal; in the whole length of the intestine, cut open, the mucous membrane was found in places thickened and congested, specially near the cæcum and colon; but histological examination of Peyer's patches failed to show any tuberculous edification; I found no traces of bacilli.

The negative result of this autopsy was not surprising; the experiment was not sufficiently advanced. However, I thought wise to double up the dose of bacilli to be given to the surviving monkeys. From this day to the end of June, each monkey of cages I and II, eat, every week, 10 centigrammes of bacilli.

* * *

Up to July 1st, it was impossible to notice the slightest difference in the general condition of the three monkeys experimented upon. Their weight, taken every week, increased regularly. From July 15, the monkey which was submitted to the régime of bovine bacilli (No. 11) began to lose flesh. From 2 kilo 130 gr. its weight had gradually gone up, in such a manner that on July 1st it had reached 2 kilo 760 gr. From that date it went down, little by little, and the day of its death, September 21, this monkey only weighed 2 kilo, .070 gram.; in two months he had lost 690 gram., more than a quarter of his weight.

Towards the end of August, this monkey had become dull, remaining buried in the hay of his litter, eating with less avidity, coughing frequently; the belly appeared bigger; the face looked paler and the eyebrows were a little oedematous.

All these symptoms increased rapidly and death occurred on September 21.

I made the autopsy on the 23d; the cadaver had been kept in the freezing box.

At the opening of the abdominal cavity, slight ascites is noticed ; there is no tuberculous peritonitis ; but there is an enormous mesenteric tuberculosis ; all the glands are hypertrophied, of puffy consistency, semi-fluctuating, specially those of the sub-lumbar region. The liver seems sound ; spleen is hypertrophied and has a few miliary nodules ; there are also a few in the cortical layer of the two kidneys. The lungs are the seat of extensive lesions ; the inferior lobes seem solidified in mass, except on the borders ; they are firm, dense, compact, white-greyish in color ; but at no point do they show centres of softening ; on the periphery, where the tissue of the lung is still permeable, and also in the superior lobe, the tissue is infiltrated with a large number of very fine greyish or translucent nodules, of recent formation. The bronchial glands are hypertrophied, in process of caseification. There are some tuberculous patches on the costal pleura and on the superior face of the diaphragm. Open its whole length, the intestine shows thickness, induration, and here and there ulceration of Peyer's patches and of the blind follicles.

To resume, we find here again all the identical lesions that we have already seen in the preceding experiments ; here they are perhaps still more marked.

* * *

The same day, September 23, I have shown you the two monkeys which were following the *régime* of human tuberculous bacilli. They had all the signs of health ; were fat, gay and strong ; they kept up increasing in weight.

One of them (No. 8) was killed and post-mortem made. The cadaver was very fat. On opening the abdomen, there is a mesenteric tuberculosis, entirely analogous to that of the preceding, but much less accused ; you can judge by the comparative examination of the specimens which have been kept in formol. All the glands of the concave border of the intestine or of the sublumbar arch are swollen and caseous in their centre. Nothing in the liver or kidneys ; fine miliary appearance of the

spleen ; few small caseous centres in the lungs ; intestinal mucous membrane appears normal.

It is certain that the monkey could have still lived a long time.

* * *

At any rate, you can see that its mate (No. 9) is still strong and gay. He has kept increasing in weight since October 15. It was the smallest of the three at the beginning of the experiment, weighing then 1850 grams. ; its weight went up to 2 kilo. 840 gr. ; but since a month he has lost 400 grams. We shall make its post-mortem now. The opening of the abdominal cavity brings in evidence a mesenteric tuberculosis entirely similar to that of the monkey No. 8, but still less advanced. The glands of the concave border of the intestine, those specially of the sublumbar arch, are all enlarged, indurated and caseous in the centre.

The small intestine shows in some points thickenings, on a level with which the walls seem thickened and indurated ; slitting it open, a diffused tuberculous infiltration is observed on the surface of the mucous membrane. The muscular and serous coats are involved in the lesion ; in some points the omentum adheres to the intestine and is difficult to separate. The spleen shows a small number of miliary centres ; there are a few also in the pulmonary lobes. The liver and kidneys are free.

We will now kill the last witness (No. 13). He is in good condition ; his coat is glossy ; the animal is gay, playful, strong and very shy.

You see that there is not the slightest tuberculous lesions. On the surface of the small intestine and in the thickness of the omentum, a few nodules of sclerostomes are found. They are identical to those of monkeys 10 and 12. Except that, all the organs are sound.

SUMMING UP AND CONCLUSIONS.

(A) Out of the six monkeys submitted to the experiment, two did not take any tuberculous product in their digestive tract ; another died accidentally less than a month after the beginning

of the experiment. Those three monkeys had absolutely not one tuberculous lesion. It can therefore be admitted that the entire lot used in the experiment were free from tuberculosis, and that the lesions found at the autopsies of the other three monkeys were certainly due to the ingestion of the tuberculous matters given to them. Besides, the localization of the lesions shows evidently that the intestinal mucous membrane has been the door of entrance for the virus.

(B) According to our previsions, tuberculosis of bovine origin has shown itself much more virulent than that of human source; it has killed monkey No. 11 in five months, leaving in him lesions without comparison more extensive than those of the two monkeys which followed the *régime* of human tuberculosis.

The monkey No. 11 was dwindling away, since more than two months; since July 1st he had lost 700 grammes, more than one quarter of his weight.

Monkeys 8 and 9, which took the same weights of human bacilli, had lesions of the same order as those of No. 11, but much less severe. Both of these monkeys could have lived a long time; when No. 8 was killed, two days after the death of No. 11, he was stronger and weighed more than at the beginning of the experiment. No. 9, that we have just looked at, kept up increasing in weight, up to October 15th, and its lesions, still less serious than its mate, would have allowed him yet a long life.

(C) If we bring the results of this series of experiments with those of the first, the following conclusions impose themselves:

(1) Monkeys (*cercopithecus callithrix* and *macacus rhesus*) are as sensitive as other mammalia to the effects of the tuberculous bacilli of bovine origin.

(2) It suffices to make them take with their liquid or solid food small quantities of culture of this bacillus, to give them an abdominal tuberculosis fatal in a few months.

(3) Anyhow, all conditions being even, bovine bacillus administered to monkeys through the digestive tract, proves itself

much more virulent and kills much more rapidly than human bacillus.*

* * *

Then, monkeys can become tuberculous, just as other mammalia, by feeding with tuberculous products of bovine origin. It would be absurd to suppose that man alone can be the only exception to the rule.

Moreover, since the Congress of London, there has been published a certain number of observations of human tuberculosis, whose products, inoculated to healthy calves, following the recommendations of Koch, have given them a tuberculosis identical to the natural disease and more or less rapidly fatal.

If one admits the formula of Koch, that bovine can become tuberculous only by the inoculation of its own bacillus, it must also be admitted—*patere legem quam fecisti*—that in all those cases, the diseased men had tuberculosis of bovine origin.

We must then maintain in reinforcing them all the sanitary prescriptions which permit the suppression of cows affected with tuberculous mammitis—that is to say, those which are far the most dangerous for public health. It is that which I endeavored to demonstrate at the International Conference which has just been held in Berlin, in a communication in which I drew the following conclusions :

" . . . The danger of the milk of cows affected with tuberculous mammitis being thus well established, it necessarily follows that public powers have the imposing duty to take the necessary measures to remove those cows from the barns where milk is produced for public consummation. Already, in numerous countries, legislation orders the slaughtering of those animals. In France, the rural code stipulates that *in case of tuberculosis well proved, the animal is killed by order of the mayor*, and the ministerial order of October 31, 1898, states that *by tuberculosis well proved, must be understood that which*

* This however refers only to the two cultures experimented comparatively; I do not doubt that types of human bacilli can be found, which may be more virulent than some types of bovine bacillus; but, very generally, bovine bacillus shows itself, by all methods of inoculation and for all mammalia notably more virulent than human bacillus.

is manifested by some of the clinical signs of the disease ; tuberculosis of the udder is one of those signs which when present carries the verdict of slaughtering of the animal. If, thus, the rural code was well applied, we would in France be protected against the serious dangers to which public health is exposed by the use as food of tuberculous milk.

"The mayors of towns are the ones to order the slaughter of cows affected with tuberculous mammitis ; but to do so, they must first know them, and this they cannot unless informed by the owners of the animals ; but these do not give the information only when the cows do not give any more milk—that is, when they are no longer dangerous.

"What takes place in France must also exist, more or less, in other countries.

"Dangerous cows will not be eliminated from the barns of their owners unless these barns are submitted to periodical inspection. Veterinary inspectors ought to visit them monthly or every two months ; they would isolate all cows presenting suspicious symptoms and specially those with mammitis ; while waiting for the diagnosis, which can be made easily and quickly with the means now known, their milk should be boiled or pasteurized before being sold or used, even for the animals of the place. The dairyman shall be obliged to notify immediately the inspector of all cases of mammitis occurring between two inspections. As soon as the diagnosis shall be established, the inspector shall notify the local authority, who will act according to the law.

"While waiting for the execution of this measure, which may be long to come, one must repeat to the public that the surest means to guard against the danger, consists *in boiling the milk before using.*"

* * *

Before closing, allow me to tell you of another experiment which is closely related to those which we have just finished and which will be somewhat their epilogue.

The first monkey that I killed by feeding with bovine tuber-

culous products was an old macaque, strong and ugly, the last survivor of a lot of four monkeys that I had in 1897, and three of which, killed previously, had been free from tuberculosis. This monkey, at three different times had eaten a potato which had been used to make a culture of bacilli of bovine origin and which had been first scraped to remove the greatest part of the culture. The first infecting meal took place September 28, 1901, the others on October 11th and November 2d. The animal died cachectic December 22d, less than three months after the beginning of the experiment. The post-mortem revealed an extensive tuberculosis of all the mesenteric glands and specially of the sublumbar, which form, as you see, a white mass, bosselated as big as a hen's egg. The spleen and liver contain numerous small tuberculous centres. The two lobes of the lung present several large centres and a large number of fine miliary nodules, grey and translucid. From the biggest sublumbar glands, I took purely a pipette of caseous pus, extremely thick and very rich with bacilli; after dilution in four volumes of boiled water, I inoculated two guinea-pigs in the peritoneum, and a healthy milch cow (No. 10, left horn) by injection in a teat of the left anterior mamma.

The guinea-pigs died tuberculous January 11 and 20, 1902.

During three months, no apparent change could be observed in the mammae nor in the secreted milk. Then, as the milk secretion diminished, a difference in the size and consistency was noticed between the inoculated gland and the others; while those were getting depressed in assuming a greater suppleness, the other kept its dimensions and its firmness, still without giving any more milk than the others; then, little by little, it increased in size and consistency, and by June 6, 1901, it had assumed all the characters of a severe mammary sclerosis.

At that time, a small quantity of serous, whitish liquid could be obtained, which, after turbinage, gave a deposit, rich in bacilli of Koch; a small piece of the indurated gland obtained by harpooning with fine trocar, gave by-preparations where the bacilli of Koch were very numerous. Finally, a second healthy

milch cow, inoculated in the teat of the udder, with five cubic centimeters of the serous fluid obtained from the first, took a specific mammitis, which developed much more rapidly than the first. To-day she is much sicker than the other ever was.

I had the first cow killed so as to show it to you. You see that she is in very good condition of fat and that all the viscerae are free from tuberculosis. The lesion is entirely limited to the udder, its lymphatic glands and the two nearest prepelvic glands.

This experiment has a double interest :

I have shown that the injection, in the udder of a cow in lactation, with a small quantity of bovine tuberculosis, gives rise to an acute tuberculous mammitis, which may kill rapidly by a true tuberculous intoxication.

But the experiment repeated in the same conditions, with culture of human tuberculosis (when this culture remains inactive in intravenous injection) gave only negative results.

The fact that the tuberculous products of my monkey have given to the cow a tuberculous mammitis shows that the tuberculosis of this monkey was well of bovine origin ; but, on the other side, the slow development of that mammitis, its localization to the infected mammae and its lymphatic glands, show that the single fact of the passage through the organism of the monkey has deeply modified the initial virulence of the bovine bacillus.* This is the demonstration of what I said last year at the Congress of London, and that I repeated to Berlin :

"The differences observed between the tuberculous bacilli of the various species are due simply to a gradual adaptation, more or less perfect, to the living media where they are. The bacillus of Koch, to be sure, is one of the microbian forms the best differentiated and the most fixed that we know ; yet as all the other microbes it submits to the influence of the living media where it grows, and the number is illimitated of the varieties that may be observed in natural conditions or in those created by experimentation."

* It must be observed that this so well localized tuberculosis did render the cow as sensitive to tuberculine as other cows affected with pulmonary tuberculosis.

SOME EXPERIMENTS UPON THE IMMUNIZATION OF CATTLE AGAINST TUBERCULOSIS.*

By LEONARD PEARSON, B.S., V.M.D., STATE VETERINARIAN OF PENNSYLVANIA, AND S. H. GILLILAND, V. M. D., ASSISTANT BACTERIOLOGIST OF THE STATE LIVE-STOCK SANITARY BOARD.

(*From the Laboratory of the State Live-Stock Sanitary Board of Pennsylvania.*)

When an extensively tubercular herd is tested with tuberculin one usually finds some animals that do not react to the test and are free from disease. These uninfected animals may be young or they may be recent additions to the herd, and their freedom from disease may be due merely to the fact that they have not had time to contract it; on the other hand, they are often cows that have been members of the herd and exposed to infection for years. That the freedom of these cattle that have long resisted the disease is not due to breed or family immunity has, in numerous instances, been shown by the fact that their parents or offspring have succumbed to tuberculosis.

To what is such resistance to tuberculosis due? It is evident that it does not depend upon species, breed, or lack of exposure. It is an individual factor. An animal may possess some power within itself to resist the tubercle bacilli that it is constantly exposed to and must daily inhale and ingest.

Careful observation of these cattle and study of them in series show that the immunity they possess is not due to what is roughly termed good general health or what the stockman knows as good condition. Cattle resistant to tuberculosis may suffer with some other disease or be in a bad state of nutrition. Cattle that contract tuberculosis show, in very many instances, until the infection is well advanced, the usual signs of good health, such as soft coat, pliable skin, clear eyes, good appetite, and regular growth or increase of weight or yield of milk in proportion to the quantity and quality of food consumed. It appears, then, that there is reason to believe that some cattle have a specific resistance to tuberculosis. We know that spe-

* Read before the Pathological Society of Philadelphia, November 13, 1902.

cific resistance or immunity of the individual, occurring under natural conditions, usually depends on a previous attack of the disease against which the animal is immune, or, as in the case of Texas fever, upon the continued existence of the disease in a form so mild as not to appreciably disturb the various functions. This principle receives practical application when persons are rendered immune to smallpox or animals to anthrax, black-quarter, lung plague, rabies, or Texas fever by inoculating them with the attenuated but living virus of the respective disease, and thus causing them to develop it in a comparatively mild form, from which speedy recovery and subsequent immunity are almost certain.

From the inoculation there results the automatic development of an antitoxin that counteracts the toxin of the disease, and, at the same time, prevents or retards the growth of the organism of that disease. Until comparatively recently this principle has been thought to hold only in respect to certain acute infectious diseases, but it is now known to be of much wider application. Protection upon this principle is usually known as vaccination. In some cases the germ-free toxin is used for a similar purpose.

In 1901 we conducted an experiment for the purpose of determining the influence of Koch's original tuberculin upon the resistance of cattle to tuberculosis. In this experiment were used four cows known by the numbers 26554, 26555, 26556, and 26557. Each was tested with tuberculin before it was admitted into the experiment. Two of these cows, 26554 and 26557, were given daily injections of 5 c.c. of concentrated tuberculin for ten days, from August 24 to September 2, 1901, inclusive. Each of the four cows in the experiment was fed daily 100 grammes of hacked tuberculous lung tissue from a cow, for ten days, from the 10th to the 19th of September, inclusive. The first pair of cows, 26554 and 26557, that had received preliminary injections of tuberculin were given subcutaneously 15 c.c. of concentrated tuberculin each day during the progress of the feeding upon tuberculous material. The

other two cows 26555 and 26556, which had not received the daily preliminary injections of tuberculin, received no tuberculin during the experiment.

One of the cows (26554) that had been treated with tuberculin, and one (26555) that had not been treated with tuberculin were killed November 25, 1901. The cow (26554) that had been treated with tuberculin showed upon post-mortem examination lesions of tuberculosis in the post-pharyngeal and mesenteric lymphatic glands. The control cow (26555) showed lesions of tuberculosis in the right lung and in the bronchial and mediastinal lymphatic glands, the post-pharyngeal and intermaxillary lymphatic glands and in the mesenteric lymphatic glands. The lesions in this control cow were more widely distributed and more advanced than in the cow that had received large quantities of tuberculin.

The other two cows of the experiment were killed December 16, 1901. In the first of these (26557) which had received the injections of tuberculin, no lesions of tuberculosis were found excepting in the mesenteric lymphatic glands. A few of these glands of both the small and large intestine showed small areas of caseation. The second control cow (26556) showed lesions of tuberculosis in both lungs, the bronchial, mediastinal and post-pharyngeal glands; and the lymphatic glands of the mesentery were more extensively involved than in the preceding cow.

From this it would appear that subcutaneous injections of the toxin of the tubercle bacillus had had some influence in increasing the resistance of these two cows to feeding tuberculosis.

E. A. de Schweinitz reported in the *Medical News* for December 8, 1894, some experiments made by him upon guinea-pigs, in which these animals were inoculated with tubercle bacilli of human origin cultivated for about twenty generations upon glycerin beef broth, and were afterward inoculated with tuberculous material from a cow. The guinea-pigs so treated remained free from tuberculosis, while check animals inoculated with the same tuberculous material from the cow died of tuber-

culosis within seven weeks. De Schweinitz also showed that the twentieth generation of broth culture appeared to be incapable of producing tuberculosis in a cow when she was inoculated intravenously with a small quantity. De Schweinitz and Schroeder report (U. S. Dept. of Agr., *B. A. I. Bulletin*, No. 13, 1896) upon other inoculations similar in nature and confirmatory of the above results. They show, further, that the attenuated culture they were working with was not virulent for cattle when inoculated intravenously in quantities of 500 c.c. of suspension in liquid.

The immunizing effect upon cattle of the administration intravenously of tuberculous material or of living cultures has been studied by J. McFadyean and by von Behring.

McFadyean reported in the *Journal of Comparative Pathology and Therapeutics* for June, 1901, and March, 1902, upon some experiments regarding the immunization of cattle against tuberculosis. He inoculated four cattle intravenously with emulsions of tuberculous material and cultures from various sources. One of these cattle, which had responded to the tuberculin test, and was, no doubt, tubercular upon the beginning of the experiment, was given about 150 c.c. of tuberculin in divided doses before inoculation. Fifteen weeks after inoculation this animal was killed and was found to contain but one tubercle, the size of a pea and completely calcified, in a mesenteric gland. Two control cattle inoculated with an equal dose of the same material died of generalized tuberculosis. Of the other three cattle of the series one was tubercular at the beginning of the experiment. All of these were inoculated intravenously from seven to eleven times during a period of from two to three years with emulsions of tuberculous materials and with cultures from various sources. It is interesting to note that the first inoculation upon each of the cows that was free from tuberculosis at the beginning of the experiment was made with avian material which was probably of very low virulence for cattle. The cattle so inoculated died of tuberculosis after two to three years from the beginning of the experiment, and in each case the

chief lesions were in the kidneys and the brain or its covering membranes. The cerebral lesion appears to have been the immediate cause of death in each instance. There can be no doubt that these animals were remarkably resistant to tuberculosis, because they lived for months or years after repeated inoculations with large quantities of material of proven virulence for cattle.

Von Behring announced December 12, 1901, that he was engaged in studying the immunization of cattle against tuberculosis, and he has since published a report (*Beiträge zur Experimentellen Therapie*, Heft, 5, 1902) upon his work. He details experiments upon several cattle treated with injections of tuberculin and with cultures of varying degrees of virulence and from several sources, and also inoculated with tuberculous material or cultures of proven virulence. It may be noted that a pure culture virulent for cattle was not available for use in von Behring's work until 1901. The experiments upon seven cows specially reported were commenced between July and December, 1901. These cows have all received repeated injections of tuberculin and of tubercle virus of low and high virulence. All of the protected cows are still alive excepting one that was killed and was found to have numerous tubercular nodules in the lungs, although these were believed to be retrogressive. This general experiment cannot be looked upon as finished, and any report upon it must be regarded as incomplete until the cows die or are killed and are examined post-mortem. The cows may appear to be in good health now, but, notwithstanding, they may be extensively tubercular. However, that they are alive after receiving quantities of virulent tuberculous material that are sufficient to kill untreated cows shows that they have extraordinary resistance to tuberculosis. The method used to treat these cows was not systematic nor the one that he now recommends upon the evidence of experiments not yet published. The method now recommended by him is to inject intravenously 0.001 gramme of a scraping from a serum culture of tubercle bacilli dried in vacuum, powdered, and suspended in water.

The culture used for this purpose was obtained originally from human sputum and has been grown in his laboratory since 1895. After four weeks a second injection is made containing twenty-five times the original quantity of tubercle bacilli, or 0.025 gramme. Von Behring has now underway extensive experiments planned to test the resistance of immunized calves to natural infection from association with infected animals in contaminated premises.

Since 1896 tuberculosis of cattle has been the subject of special and extensive study and experimentation in the laboratory and research station of the Pennsylvania State Live-stock Sanitary Board. During this time the virulence for cattle and other animals of tubercle culture and material from many sources have been tested by Dr. M. P. Ravenel, Dr. John J. Repp, and ourselves. The results of some of this work have been reported upon several occasions to this Society by Dr. Ravenel and to the British Congress on Tuberculosis in 1901. Some experiments looking toward the development of better methods for repressing tuberculosis in herds have been reported by Dr. Leonard Pearson.

It has been shown by numerous experiments that the sputum of persons suffering from consumption and cultures of tubercle bacilli made from such sputum are usually comparatively non-virulent for cattle. It is important to know, further, that a given culture of sputum tubercle bacilli is incapable of producing serious disease in such quantities as it may be necessary to use in an attempt to increase an animal's resistance to tuberculosis.

The following experiment throws light upon the question as to the quantity of culture of this kind that may be administered and the effect of repeated inoculations made in four different ways. A Jersey heifer (26415) shown by tuberculin test to be free from tuberculosis was inoculated intraperitoneally September 29, 1900, with 4 c.c. of a standard suspension* of human

* By a standard suspension is here meant a suspension of tubercle bacilli in water in such quantity as to give an opacity equal to that of a twenty-four-hour culture of typhoid

sputum culture that had remained in a collodion capsule in the abdominal cavity of a bull for seven months, and was then regained in pure culture by Dr. Ravenel. The third generation on blood serum furnished the material for this inoculation. The heifer was inoculated intravenously March 15, 1901, with 13.5 c.c. of a standard suspension of tubercle bacilli, probably of human origin, that had passed through a coati (*Nasua narica*), and were recovered in pure culture by Dr. Theobald Smith in 1895. This culture had afterward remained about one year in a collodion capsule in the peritoneal cavity of a heifer, had been recovered by Dr. Ravenel, and the third generation on blood serum after recovery supplied the material for the present inoculation. A second intravenous inoculation with 10 c.c. of similar suspension was made June 1, 1901. August 23, 1901, this heifer was inoculated with 20 c.c. of a standard suspension in water of a culture (H) of tubercle bacilli from human sputum. This quantity of material was divided into four parts of 5. c.c. each, and these parts were injected beneath the skin, into the peritoneal cavity, into the jugular vein, and into the lung, respectively. These injections were repeated at intervals of from seven to ten days until January 29, 1902. The quantity of standard suspension was increased 10 c.c. with each successive inoculation, so that at the last, the eighteenth, inoculation the total quantity given was 160 c.c. The total quantity given in this series of inoculations was 1797 c.c. of standard suspension. There was a rise of temperature of from two to four degrees following each inoculation after the first one. The first inoculation caused no temperature reaction. The heifer was in strong, thrifty condition at the completion of the series of inoculations, and improved in condition throughout the following months. It was killed August 14, 1902. The condition was good, and there was an abundance of fat upon the carcass and about the intestines. The post-mortem examination revealed the lungs to

bacilli in bouillon. 1 c.c. of such a suspension is estimated to contain the equivalent of 0.0013 grammes of tubercle bacilli after drying ten days in a desiccating chamber over calcium chloride.

be normal in color and elastic ; they were free from nodules, but were attached to the chest walls along the lower borders by fibrous bands. A few flakes of fibrin were found upon the omentum, and these flakes contained a few calcareous nodules about one-twelfth of an inch in diameter. The liver was adherent to the diaphragm over an area five inches in diameter.

A yearling grade short-horn bull (26442) after having been tested with tuberculin and proven to be free from tuberculosis, was inoculated intraperitoneally November 19, 1900, with 16 c.c. of a suspension of tubercle bacilli from a culture from human sputum that had remained in a collodion capsule in the peritoneal cavity of a bull for seven months. The third generation on blood serum after recovery furnished the material for this inoculation. March 17, 1901, this bull was inoculated intravenously with 13.5 c.c. of a standard suspension of a culture similar to that used in the inoculation of the above heifer (26415) on March 15 and June 1, 1901. This animal was subsequently inoculated in the same manner as the heifer, receiving eighteen inoculations between August 23, 1901, and January 10, 1902. He received in all 1710 c.c. of standard suspension. He reacted following the inoculations very much as the heifer, although somewhat more slowly. He remained in good condition and apparent good health until he was killed excepting for the development of an abscess over the jugular vein, which was opened November 22d, and afterward healed nicely. January 18, 1902, this bull was inoculated intraperitoneally with 10 c.c. of a standard suspension of tubercle bacilli from a culture (H) of bovine origin. The virulence of this culture for cattle had been proven by numerous inoculations, among which the following may be mentioned : A cow (26431) weighing 950 pounds was inoculated intravenously January 8, 1901, with 5 c.c. of a standard suspension from a culture of bovine tubercle bacilli H. The cow lost weight rapidly to 750 pounds, and died March 4, 1901. Post-mortem examination revealed most extensive miliary tuberculosis of the lungs. Another cow (26433), weighing 698 pounds, was similarly inoculated at the same time, and died

January 26th of miliary tuberculosis of the lungs. This cow received two injections of tuberculin of 0.4 c.c. each on January 16th and 22d. Both of these cows had been shown to be free from tuberculosis by tuberculin test before they were inoculated. A red heifer (45072), about eight months old, was tested and did not react. It was inoculated intraperitoneally April 30, 1902, with 5 c.c. of standard suspension of bovine culture H. It died June 7, 1902, and was found to contain extensive lesions of tuberculosis upon the peritoneum and abdominal organs, and the lungs, also, were crowded with small tubercles. The bull (26442) was killed August 13, 1902. The general condition was good, and there was much fat upon the carcass and about the internal organs. The pleura lining the lower half of the chest was covered by a sheet of partly organized fibrin from one-eighth to one-third of an inch thick. The lungs themselves contained a few nodules about one-half inch in diameter surrounded by thick walls and containing caseous pus in which there were many tubercle bacilli. These nodules did not seem to be progressive, and appeared to be abscesses indicating the sites of previous inoculations. The peritoneum covering the abdominal walls, the stomach, intestines, spleen, and liver was coated with a layer of partly organized fibrin, as in the chest. The lymphatic glands about the rectum were enlarged and caseous. The surface of the omentum was rough from the presence of a thin layer of partly organized fibrin. The omentum was thickened in places, but there were no distinct nodules. From the fact that the fibrinous coating of the serous membranes was as pronounced in the thoracic as in the abdominal cavity it is probable that the virulent culture of tubercle bacilli injected into the abdomen has little to do with the production of this deposit, which may readily have resulted from the discharge of a pulmonary abscess into the pleural cavity or the discharge into the peritoneal cavity of the purulent contents of one of the softened lymphatic glands in the pelvis.

It is evident that the sputum tubercle bacilli used for the inoculation of these two animals (26415 and 26442), even in

the exceedingly large quantities in which they were employed, were incapable of causing general tubercular infection. Even the intraperitoneal inoculation of the bull with a quantity of virulent culture nearly twice as great as was necessary when similarly administered to kill an unprotected heifer did not, so long as he was permitted to live, appreciably disturb his general health. The human sputum culture M used for these inoculations was obtained by Dr. Ravenel from the sputum of a consumptive woman in September, 1899. As a further indication of its degree of virulence, it may be noted that two guinea-pigs were inoculated, subcutaneously, December 18, 1901, each with 1 c.c. of a standard suspension of this culture. One guinea-pig died March 8th and the other March 20th, of generalized tuberculosis. Two rabbits were also inoculated December 16, 1901, each with 2 c.c. of the same suspension. Both died suddenly in June, one on the 3d and the other on the 10th, from having been given improper food. Both were free from all evidence of tuberculosis and showed no alteration excepting diffuse redness of the intestines.

These experiments tend strongly to show that cattle may be refractory to enormous quantities of tubercle bacilli from human sputum when injected into the blood beneath the skin, into the peritoneal cavity or into the lungs; and the result upon one of the animals (the bull) indicates that after such treatment the resistance to virulent culture of bovine origin may be increased.

An experiment was inaugurated in March of this year, to again, and more definitely, test the immunizing value of repeated intravenous inoculations of cultures of sputum tubercle bacilli not virulent for cattle. For the purpose of this experiment four young cattle were used, as follows: A black and white bull, sixteen months old (46066); a red heifer, twelve months old (45068); a red heifer, fifteen months old (45067), and a red heifer, eleven months old (45071). All were tested with tuberculin and were proven to be free from tuberculosis. They were divided into two groups of two each as nearly equal as possible in respect to age, size, and general condition. The

animals of one group were inoculated intravenously seven times between March 24th and June 2d, with gradually increasing quantities of from 10 c.c. to 25 c.c. of a standard suspension of a culture of sputum tubercle bacilli. In all, 125 c.c. of this suspension were administered, representing about 0.16 grammes of tubercle bacilli.

Each of the four animals in this experiment—the two that had been vaccinated (45066 and 45068) and the two kept as controls (45067 and 45071)—was inoculated July 29th by injecting into the trachea 10 c.c. of a standard suspension of bovine tubercle bacilli (culture H) known to be virulent for cattle. The intratracheal method of inoculation was used, because it furnished a means of conveying tubercle bacilli into the organs most frequently infected in nature and in a manner unattended by disturbance of function or with material traumatism. It seemed to give a mode of infection closely resembling the natural one. One of the vaccinated cattle (45068) was killed October 4th. A searching post-mortem examination revealed all of the organs, including their lymphatic glands and covering membranes, to be free from all evidence of disease, with the exception of a slight fibrous thickening of the wall of the jugular vein at the point of vaccination. At the site of the intratracheal inoculation of July 29th there was no mark, and the mucous membrane lining the trachea was entirely normal.

A control heifer (45071) killed October 8th showed the following upon post-mortem examination: At the point of inoculation, upon the outside of the trachea and beneath the skin, there was a globular abscess about three-quarters of an inch in diameter, containing cheesy pus. The mucous membrane of the trachea showed a number of small, reddish elevations (tubercular) below the point of inoculation. The lungs were studded upon the surface and upon cross section with grayish nodules one-quarter to one-half an inch in diameter, the centres of which were caseous. These tubercles were evenly distributed in both lungs and roughly averaged from one to one and one-half inches apart. They could be plainly seen and felt through the trans-

parent pleura. The apex of the right lung contained a caseous area two inches in diameter, which was made up of many adjacent small tubercles. The bronchial and mediastinal lymphatic glands were enlarged and contained cheesy areas from one-sixteenth to one-third of an inch in diameter. The post-pharyngeal lymphatic glands were enlarged to the size of an egg, hyperæmic, and on section showed numerous caseous areas.

The second vaccinated animal (45066) was killed October 16th. At the two points of insertion of the needle when the animal was inoculated, July 29th, there were two somewhat hard, globular fibrous thickenings one-quarter to three-fifths of an inch in diameter, respectively. Within the trachea, and occupying positions corresponding to these, were two very small (pin-head) grayish elevations in the mucous membrane. Upon section it was found that the upper of these small thickenings was made up of fibrous tissue, the lower (the smaller one) contained a focus of caseous material surrounded by thick, fibrous walls. The whole appearance was that of a closed process. No other lesions were found in any part of the body. All of the organs, their lymphatic glands and covering membranes, appeared to be quite normal. There was no thickening of the wall of the jugular vein at the point of vaccination.

The second control (unvaccinated) heifer (45067) was killed October 16th. The post-mortem report is as follows: Beneath the skin in the middle of the neck, at the point of inoculation, there was an abscess about two inches in diameter that contained cheesy pus. All of the inferior cervical and suprasternal lymphatic glands were enlarged to several times their normal volume and contained numerous areas of caseation. Within the trachea, from the point of inoculation down to its bifurcation, and up to the glottis, the mucous membrane lining the ventral half of the tube was thickly studded with oblong, red, and evidently young and progressive tubercular growths. These formations were from one-sixth to one-half an inch long, and about two-thirds as wide; they stood above the surrounding surface from one-twelfth to one-half an inch. The post-pharyngeal

lymphatic glands were enlarged to the size of a hen's egg and loaded with caseous material. The lungs contained many grayish nodules one-eighth to one-quarter of an inch in diameter. The smaller were grayish throughout, while the larger had yellow, cheesy centres. These nodules were not set so thickly as in the other control heifer (45071). They averaged from four to five inches apart, and were very evenly distributed throughout both lungs. The mediastinal and bronchial lymphatic glands were enlarged to twice their normal size and contained much caseous material. Many (about eighteen) of the lymphatic glands of the mesentery were enlarged and caseous. No alteration could be found in the mucous membrane or the walls of the intestine. The infection of the mucous membrane of the trachea above the point of inoculation appears to have been due to the carriage upward by coughing of some of the tubercle bacilli at the time of inoculation. It is well known that cattle habitually swallow their expectorations, and this may account for the infection of the post-pharyngeal and mesenteric lymphatic glands.

From the experiments here recorded we believe that we are justified in concluding :

1. That after repeated intravenous injections of cultures of tubercle bacilli from human sputum the resistance of young cattle to virulent tubercle bacilli of bovine origin may be increased to such an extent that they are not injured by inoculation with quantities of such cultures that are capable of causing death or extensive infection of cattle not similarly protected.
2. That by intravenous injection much larger quantities of culture of human sputum tubercle bacilli than are necessary to confer a high degree of resistance, or immunity, upon the vaccinated animal may be administered without danger to that animal.

We now have in progress uncomplete experiments upon a number of young cattle, some of which have been underway since last March, for the purpose of testing the duration of this immunity and the extent to which it is effective in protecting

cattle against infection from natural sources. We have also started an experiment which we hope will throw light upon the open question as to the minimum quantities of culture of non-virulent tubercle bacilli that it may be necessary to administer in order to confer a serviceable degree of immunity, and, further, whether it may be possible to simplify the process of vaccination by successive injections of a few cultures of progressive degrees of virulence.

In conclusion, we wish to express our thanks to Dr. M. P. Ravenel and to Dr. H. C. Campbell; to the former for the originals of most of the culture used, and to both for general assistance during the progress of the experiments. We also wish to thank the authorities of the Veterinary Hospital and of the Pepper Clinical Laboratory of the University of Pennsylvania, who have generously furnished the State Live-stock Sanitary Board with a laboratory and with other facilities, without which its research work would have been impossible.



Post-pharyngeal lymphatic glands of control heifer No. 45067. Enlarged and caseous.



Upper portion of trachea of control heifer No. 45067. Shows tubercular growths on the mucous membrane.



Post-pharyngeal lymphatic glands of vaccinated bull No. 45066. One is bisected. Normal in size and texture.



Cervical, mediastinal, and bronchial glands from control heifer No. 45067. One-half normal size. All are enlarged and caseous.



Mesenteric lymphatic gland from control heifer No. 45067. Enlarged and caseous.



Lower portion of trachea of control heifer No 45067. Shows tubercular growths on the mucous membrane.

QUININE CAMPHORATE.—A chemical compound of quinine and camphor has been prepared by Joyce, who attributes to it sedative properties.

CHEMISTRY OF ANTITOXINS.—The problem of solving the chemical constitution of antitoxins is a step nearer towards solution by the discovery of Proscher (*Munch. Med. Woch.*) of a method of removing from the serum all traces of albuminoid matters, without impairing its properties. This, of course, proves that antitoxins do not belong to the albuminoid compounds, as has hitherto been supposed, although we are, it is true, still in the dark as to what group they should be attached to.

ETIOLOGY AND PREVENTION OF INFECTIOUS DISEASES OF ANIMALS.

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The modern conception of a specific cause for each of the infectious or contagious diseases had its origin and development with the science of bacteriology. It is both interesting and instructive to note that it is one of the practical results of the researches in natural history. With the recognition of the importance of studying the abnormal in nature with equal care and with as exacting methods as the normal, it soon became evident that the conditions known as disease are simply processes resulting from natural causes. The older pathologists had a glimpse of this. Virchow thought he had found the *agens morbi* in the individual cells of the diseased tissues. However, it remained for Tyndall, a physicist; Pasteur, a chemist; and Koch, a physician, to unite etiology to botany and to zoölogy and to teach the pathologist to go to those sciences for the exciting causes of the infectious diseases. Hunter, Sydenham, and others had already studied and, to a limited degree, classified them in accordance with the interpretation of the organic world about them. Consequently it remained simply for the development of instruments of precision and modern methods of research for the microbiologist to point out with unerring accuracy the specific, causative agents for many of the plagues that have decimated over and over again the animal population of the world.

The first disease which was demonstrated to be due to a microscopic parasite was perbane, a destructive silkworm disease in France. This, Pasteur showed to be due to a fungus. It was not, however, until Koch had discovered the bacterium of tuberculosis and isolated the spirillum of Asiatic cholera that the significance of a specific etiology began to dawn upon the

medical profession. Like the first star of the evening, which is soon surrounded with brighter orbs, these first revelations of specific etiology were quickly followed by other and still more brilliant discoveries respecting the nature and transmission of disease. Finally, we were led to believe, it was demonstrated to us, that infections, the epidemic and epizoötic diseases, are simply parasitism. The man or animal suffering from malaria, tuberculosis or glanders is actually and simply a host entertaining within his very being, and at the expense of his own vital forces, a multitude of ungrateful guests in the form of microscopic plants or animals.

Much of the work that has been done in pathology during the last twenty years has been the search for these specific agents, microscopic plants and animals, which by virtue of their parasitism cause the infectious maladies. The success has been unparalleled in the history of medicine. To-day we encounter epizoöties of anthrax, glanders, tuberculosis, hog cholera, Texas fever, and many other of the scourges of former times, with as definite knowledge of their cause, their course, the methods of their dissemination and the measures necessary for their restriction, as has the railroad engineer of his means and power to control his locomotive or the electrician to illuminate our streets.

At the end of the path which specific etiology is constructing through the slough of human and animal diseases, there are still a number of serious maladies concerning whose exciting causes we have as yet little knowledge. Among these may be mentioned smallpox, rinderpest, yellow fever, foot-and-mouth disease, rabies and many others that are now recognized by a variety of vague and indefinite appellations. For this group the search for the specific cause is still in progress, while for the first mentioned, investigations are being made intended to bring forth ways and means for their specific treatment, or, better still, their eradication.

Although simple in fact, the idea of a specific cause is not always easily grasped and consistently adhered to. Let me il-

lustrate with a disease of man with which you are all familiar. Klebs and Loeffler found that diphtheria was caused by a certain species of bacteria. This organism can be found in the throat just before, during, and for a certain time after the symptoms and lesions of the disease have disappeared. This bacterium can be distinguished from other bacteria by certain morphological and physiological properties. If, therefore, we desire to determine whether a case of sore throat is diphtheria, it is simply necessary to establish the presence or absence of this one single species of bacteria. Notwithstanding, with this definite knowledge, the appearance of an epidemic of diphtheria brings forth a great number of bewildering theories or individual notions respecting its origin and cause. These theories the people will often believe, rejecting the specific cause for one which appears to them to be more likely. It sometimes seems, when this disease is actually in our midst, that the intellectual equipoise of many people is disturbed, and that there is a sudden turning from the rational to the irrational, from the demonstrated facts of to-day to the superstitions of former times respecting its etiology and likewise its treatment. On account of this wavering, the disease has spread to others and death has often come as a rapid sequence, simply because the teachings of a specific etiology were not observed. What is true of diphtheria may be predicated for other specific diseases.

Again, outbreaks of disease are encountered among the domesticated animals which suggest an infection, and the diagnosis of hog cholera or anthrax, as the case may be, is, from very general symptoms, easily pronounced. Such a diagnosis, however, means much to the people of the community. It implies that a heartless enemy is in their midst and their flocks and herds if not their families are in danger. Specific etiology teaches us to avoid all uncertainty and not to "cry wolf unless a wolf is near." The methods of modern pathology have made it possible in most cases to determine the cause if it is present, and, if absent a diagnosis of such a serious nature without demonstrated proof is not just, either to the person who makes it,

the owner of the animals, or to the state at large. It is by procuring definite knowledge of the etiology determined with methods of precision, which rarely deceive, that we are led to the truth respecting the cause of these affections. On the other hand, we are often profoundly embarrassed by our ignorance and inefficiency when the cause of death is obscure. However, it seems better to stand by the truth and say we don't know, than to take chances and make with such serious matters in the absence of evidence, a positive diagnosis. It is in this great field of "we don't know" respecting etiology that we should gather our strongest forces for research, and continue the inquiry until an explanation can be found. It has already been demonstrated many times that the cause is often among the unexpected agencies. Permit me to illustrate with a single experience with a supposed epizootic disease.

A few years ago we were called upon to investigate many outbreaks of supposed hog cholera and swine plague prevailing about our larger cities. The examinations failed to reveal the existence of either of these diseases or of any other known infectious malady. Moreover, the history was not that of an infection. The cause seemed to be in the food but this was denied because the owners had always fed this kind of material without loss until then. For more than two years we were unable to find the cause. The answer "we do not know" became very tiresome. Every seemingly possible effort was made to unravel the mystery until finally it was suggested by a farmer that probably the cause would be found in the powdered soap used in the dishwater which was often given to the pigs. This suggestion seemed a good one and arrangements were immediately made to put it to a test. Animals were procured and within two weeks the fact was clearly demonstrated that the quantity of powdered soap used by many dish washers in a single pan of water would, if administered repeatedly for a few days, kill hogs with similar symptoms and like lesions to those found in the animals examined in previous outbreaks in which no cause could be found. Thus, by this unexpected yet simple

nethod, one of the agents was found that was destroying many animals and which was commonly thought to be an infection. While this is not, biologically speaking, specific etiology, it is referred to here because it brings into bold relief the distinction between a specific biologic agent and those general causative factors of disease so frequently found in improper food and environment.

We are thus led to believe that the first essential of a specific etiology is its value in making a diagnosis. Such an element tends inevitably to the more common use of instruments of precision and the application of a scientific habit of thought. With the incoming of exacting methods of diagnosis there is an outgoing of so-called art. Diagnosis by intuition, by careless "rule of thumb" methods, by an appeal to an experience which is incoördinate, unsystematized and unarranged, is as little trustworthy as the shifting sands of the Sahara. By virtue of a specific cause, diagnosis has become in case of many infections of animals specific, definite, and positive. For this reason the art of veterinary medicine "has grown more practical because more scientific and less theoretic because more practical."

In the doctrine of specific causes, however, there are involved many problems which are mystifying to the beginner and puzzling to the expert but which, nevertheless, demand attention. These fall into two groups, viz.: (1) Those concerning the origin and permanency of the etiological factors themselves and (2) those relating to the dissemination of these agents. If we wind our way through the voluminous literature on infection and the origin of disease producing microorganisms, we shall eventually arrive at present issues with apparent facts to sustain three seemingly conflicting theories respecting the pathogenesis and the origin of specific, disease producing bacteria. The harmonizing of these views is one of the tasks for the future.

The first theory consists in the specificity of the disease producing organisms as set forth by Plenzy, then more acutely by Henle and in later times by Davaine, Pasteur, Klebs, Koch,

and others. This parasitic theory of an infectious disease asserts that every specific infectious disease is caused by a specifically characteristic, small living thing or microbe. Most of these microbes, but not all, are bacteria. These bacteria which are entities altogether external are, as Koch has set forth with great clearness, "the sole, true, and sufficient cause of infectious diseases." This school holds that these pathogenic bacteria are practically unchangeable. At some time in the past they were created and as such they will continue to remain. How such specific agents may produce different forms of disease as clinically observed by every practitioner will be briefly discussed in a later paragraph.

The second theory has been suggested by the investigations of many bacteriologists who maintain the specific character of the infectious diseases, but who hold that the specific organisms are subject to evolutionary changes. Thus Rodet and Roux elicited experimental evidence that the bacillus of typhoid fever was a degenerated form of *B. coli communis*, a bacterial inhabitant of the normal intestine of man and of animals. Hüppe has recently called attention to the fact that certain of the supposed harmless or saprophytic bacteria are often, under favorable conditions, the cause of disease. The investigations made in my laboratory with bacteria from lesions treated in the surgical clinic show that a number of species of supposed harmless microorganisms are capable of and often do produce wound infection. There are also numerous results reported showing that the bacteria of tuberculosis, glanders, diphtheria and still others are the final products of mycelial fungi and hence primarily of other species.

The third hypothesis maintains that in certain instances, in order to produce an epizoötic there must be an external condition or cause accompanying the infecting microbe. That is, it is affirmed that in order to have the affection "take" as it were, there must be in conjunction with it certain as yet not definitely defined unsanitary conditions.

Although these seemingly contradictory theories are to be

threshed out and eventually unified by the specialists, an appreciation of their existence with a conception of the very limited knowledge of the great possibilities of these living etiological factors will help one to understand more clearly the real significance of the results and assertions of the far sighted or of the extremest. Most of the denunciation of Smith's and Koch's publications on the human and bovine tubercle bacteria has come from those who know nothing about the natural history of the disease. Consequently they are unable to appreciate the distinction between varieties due to different environment or conditions of life, and absolutely different species.

A second benefit derived from a specific etiology is found in its value in differentiating closely related affections. In an old pathology we learn that tuberculosis, glanders and actinomycosis are very closely related if not identical. Now we know that the bacteria of tuberculosis and glanders and the fungus of actinomycosis are as different as three species of flowering plants and equally different are their morbid processes. Conversely, scrofula, lupus, and tabes mesentericus were formerly considered as different diseases, now we know from their etiology that they are varieties of the same parasitism, viz., tuberculosis. Many other illustrations could be cited. With the existence of definite causes the isolation and grouping of animal diseases will continue until they are classified in accordance with their etiology.

This brings us to the explanation of the variations often found in the course of a disease produced by the same species of bacteria. To understand this it is necessary to note that we are dealing with a problem in which the two main factors are unmeasured and to a certain degree unmeasurable vital forces. The problem is one in biology, where unexpected deviations may occur as a natural, though unexplained, result of the immediate conditions of life. Further, animals possess varying degrees of resistance and the specific bacteria vary in their pathogenesis and virulence. The causes for variation, therefore, are cast in a simple equation, namely, the course of the disease will change in accordance with the variation in either

the resistance of the animal or the virulence of the bacteria in question. Thus, for example, the bacterium of acute septicæmia which kills rabbits in eighteen hours, may be so changed, that the lesions may become peritonitis, pleuritis, pericarditis, subcutaneous or deep seated abscesses, but nevertheless, one and the same disease. In swine we often see abscesses in the joints due to the localization of hog cholera bacteria, which, owing to one or the other or both of the causes given, have produced in the place of acute intestinal ulcerations, long continued and painful localized joint abscesses. The formula is simple; but define for us who can, the range of influences that may modify that subtle property of bacteria which we call virulence? What elements in the animal body impart to it a natural resistance? Another question of much importance is that which concerns the influence of the host upon the parasite. It has already been found, that in many cases, "the continuous passage of the species of bacteria through a single species of animals, tends to increase its virulence for that species and to attenuate it for certain, if not for all others." This hypothesis, which needs to be verified, is one of vital importance respecting the transmission of infectious diseases from animal to man and *vice versa*. It is well to know that, in most cases at least, these diseases are transmitted from one individual to another of the same species, and that infection from one species to another is the exception rather than the rule.

In a third place; a specific cause is of great assistance in determining the channels through which the virus of an infectious disease are disseminated. When an outbreak or a sporadic case of some serious infectious disease appears it enables one, in most cases at least, to explain how it happens to occur, to tell the owner how to prevent further loss, and the community how to protect its herds. To be sure this is not always easy, but when the probable source of infection is indicated, the specific cause is pointed out, the means by which this definite agent can escape and infect other animals are all carefully and fully explained, the problem is practically solved. When these condi-

tions are not fully appreciated, wide spread epizoötics are liable to occur. It is because of the neglect to recognize this definite agent, to recognize the conditions under which it may live and be carried from one place to another, that the infectious diseases are of so much importance to our live-stock industry. The exposure of animals in infected cars, feeding pens and stables, the introduction of a diseased animal into a healthy herd, or one still healthy in appearance but already infected, are a few of the channels through which the virus may gain entrance. The literature is teeming with cases illustrating, in a striking manner, the unexpected ways by which the minute disease producing organisms gain entrance to their host and in turn perpetuate their species. The problems for us to solve, therefore, are the elucidation of the life history of these invading organisms. Who would have believed twenty years ago that the rats around the country slaughter houses are largely responsible for the spread of trichinosis; that the cattle tick transmitted the cause of Texas cattle fever; or that malaria and yellow fever are spread by means of the mosquito?

These are but a few of the discoveries which have shattered the empiricism of the older pathology and established in its stead preventive medicine. Individual opinions respecting etiology are being rapidly replaced by demonstrated living causes which all who will, may see and study for themselves. Finally, the entire science of comparative medicine, which controls its practice, is being reconstructed in accordance with the teachings of definite, specific, etiological factors.

[NOTE.—This paper was followed by an exhibition of about forty lantern slides illustrating the cause and means of transmission of specific diseases.]

FARMER PEACHSTONE: "Gosh a mighty, doctor, can't you do sumthin' for a feller more'n you're doin'? I'm plump tired of six meals a day—three goin' up and three goin' down."

DR. ADOLPH EICHHORN, B. A. I., stationed at Milwaukee, has been transferred to the East in connection with the investigation of foot-and-mouth disease.

PRESIDENT'S ADDRESS.

BY DR. WILLIAM HERBERT LOWE, OF PATERSON, N. J.

Delivered before the Veterinary Medical Association of New Jersey, at Trenton, January 8th, 1903.

Fellow Members and Colleagues:—

The veterinarian is a student of life. The Bible and scientific research agree that vegetable and animal life existed on this earth before man, and the veterinarian believes in beginning his studies at the beginning for the benefit of animal life in general as well as for the benefit of man himself. There are two worlds of life that man cannot see unaided—in one the organisms are so infinitesimally small that they cannot be seen with the naked eye, and in the other the beings cannot be seen with the naked eye because they are beyond his horizon. As man has dominion over the lower animals it is incumbent on him, in the very nature of things, that certain men should make a study and practice of animal or veterinary science for the benefit of our material and business prosperity as well as for such knowledge as concerns the health and lives of ourselves.

Some people do not like the profession of the veterinarian because in his practice he has to go into stables, treat the accidents and ailments of animals, and come in contact with attendants of animals. I would like to remind these people of the incident of Christ's birth; how He was born in a stable, wrapped in swaddling clothes and laid in a manger with the cattle. He was not contaminated and neither will anyone of to-day be if he is properly constituted and has right and noble impulses. I allude to the incident of Christ's birth at this time simply to remind superficial people that it is always well to have a full understanding of any subject before passing judgment upon it.

Experiments made upon animals during the last few years, the study of vegetable and animal life in its elementary and minutest forms, together with recent discoveries in chemistry,

are exceedingly rich in the results of new discoveries and important investigations, which have revolutionized the previously-conceived ideas of medical men as to the etiology of diseases, which are not only of great practical importance to the veterinarian in his practice, but are of vital importance to mankind, since they furnish the foundation for modern and intelligent treatment of many of the diseases that afflict the human family.

The fundamental facts of the pathology of the more common of the infectious diseases of animals, in the light of our present-day knowledge, will be given us to-day in a concise form and illustrated by the stereopticon, by one who stands in the front rank among American comparative pathologists and bacteriologists.

During the last three years the veterinary profession of New Jersey has been making history that will ever be of increasing benefit and advantage to the people of our State, and an enduring honor to the veterinarians who made possible the triumphs and achievements that we record to-day. I will not dwell upon the recent struggles and labors of many loyal members of this organization, for the work they did and the personal sacrifices they made are still fresh in our memories.

Veterinary annals will record three triumphant days in New Jersey.

The first is January 11th, 1900, which day witnessed one of the most remarkable gatherings that ever occurred in the history of veterinary medicine, when there gathered together the largest number of veterinarians that had ever assembled at one time in New Jersey, and resulted in the surrender of two State charters and seals and the successful and complete amalgamation of three State societies in one strong harmonious body.

The second triumphant day was March 17th, 1902, when Governor Franklin Murphy signed Senate Bill No. 76, by Senator Wood McKee, entitled "an act to regulate the practice of veterinary medicine, surgery and dentistry in the State of New Jersey, to license veterinarians and to punish persons violating the provisions thereof," thus making this bill a sovereign

law of our State. This law is known as Chapter 18, Laws of 1902.

The third triumphant day was May 5th, 1902, when the five members of the State Board of Veterinary Medical Examiners appointed by Governor Murphy took the oath of office in the State House and organized the veterinary board pursuant to the provisions of the new law.

I wish to emphasize the fact that the enactment of this law, creating a State Board of Veterinary Medical Examiners to regulate the practice of veterinary medicine, surgery and dentistry in the State of New Jersey, to license veterinarians and to punish persons violating the provisions thereof, was made in recognition of the necessity and value of competent veterinary service to live-stock owners, agricultural and dairy interests and the preservation of public health. In other words, to protect the public from charlatans and quacks, rather than to protect competent veterinarians, for the qualified veterinarian does not need any such protection.

The movement inaugurated this year to organize local societies in the respective counties of the State in affiliation with the Veterinary Medical Association of New Jersey, is one to which I attach a great deal of importance. I am very proud to say that the movement was started in my own county and that on July 7th, 1902, the practitioners of this county organized the Passaic County Veterinary Medical Association, which meets monthly and the meetings are well attended. Every licensed practitioner in the county, now nineteen in number, is an earnest member and staunch supporter of the local organization. Every member signed the constitution, by-laws, code of ethics and schedule of fees adopted by the society. The members are all pledged, *upon their honor*, to support the constitution, by-laws, code of ethics and schedule of fees. I am gratified and delighted to be able to say that each member takes much pride in fulfilling his obligations and extending courtesies to his brother practitioners that add much to the pleasure and satisfaction of practice. Local societies should be organized in

such counties as have a sufficient number of practitioners to warrant it, each in affiliation with the State Association.

One of the most noteworthy events in the veterinary world that occurred during the first year of the twentieth century was the meeting of the American Veterinary Medical Association at Atlantic City, during the first week in September, 1901, where gathered together the representative veterinarians of the entire American continent. It was the distinguished privilege of the Veterinary Medical Association of New Jersey to welcome and entertain the veterinary hosts at this mecca by the sea. The achievements of this meeting add also to the recent history the profession has been making in New Jersey.

The State Laboratory of Hygiene is now located at Trenton, under the supervision of the State Board of Health. The work is conducted free of charge and it consists in examinations for diagnosis in the various affections which are produced by micro-organisms. Communicable diseases of whatever character, whether peculiar to man or to the lower animals, are investigated, and a diagnosis is made when possible. Veterinarians should avail themselves of the use of the laboratory in cases of communicable diseases. The State Board of Health furnishes blanks for reporting contagious diseases in animals. Veterinary practitioners should report all cases of contagious diseases to the State Board of Health on the blanks furnished by the board.

In the year 1862 an act was passed by Congress providing for the establishment of State agricultural colleges for the teaching of agriculture and mechanical arts; and in 1887 Congress passed an act establishing agricultural experiment stations in connection with agricultural colleges for original research into "the physiology of plants and animals, the diseases to which they are severally subject, with the remedies for the same." In other words, Congress several years ago provided for original research in veterinary science as well as for its practical application. I have not had an opportunity, much as I should have liked to have had, of visiting our State Agricultural College and Experiment Station. I would recommend that this

Association appoint a committee to make such visit and ascertain what is being done along the lines of modern veterinary science and art, and if this branch of the work is in the hands of qualified veterinarians, or whether laymen and men of other professions are engaged in it.

I would recommend that this Association adopt a two-days session at its annual meetings, and that it start a State veterinary library. Your President's office has been virtually a veterinary bureau of information during the last two years. The correspondence has been such as to require much time and daily attendance.

Among the positions that New Jersey veterinarians have filled with credit during the past two years are: Health Officer of Summit; assistant Bacteriologist of the Health Department of Newark; Veterinarian to the Essex Troop; Veterinarian to the Atlantic City Horse Show; Chairman and Members of Committee on Animal Diseases and Animal Food of the New Jersey Sanitary Association; Veterinarian to local and city boards of health and city veterinarian to some of our larger cities.

I wish in behalf of the Veterinary Medical Association of New Jersey, to take this opportunity to publicly acknowledge the great debt of gratitude the profession of our State owes to the AMERICAN VETERINARY REVIEW and to the *Journal of Comparative Medicine and Veterinary Archives*. One of the greatest sources of encouragement in the work of organization and legislation was the ever earnest and able support by both these journals. Veterinary journalism in this country has become a power in the profession. I do not believe that there is another single factor that is equal to the veterinary press in promoting the individual and common interests of the profession.

The veterinarian cannot be up to date in his knowledge and his methods of practice unless he knows what is going on in the veterinary world. I cannot see how a veterinarian can get along without his REVIEW or his *Journal*. If he does, he is simply starving his mind of such information as would go to enrich it and make him a better and more successful practi-

tioner. He is not only doing an injustice to himself by not keeping in touch with the advance work of the profession, but he is doing an injustice to his clients, and as a natural consequence he is the sufferer in the end. There is no investment that pays a practitioner such large returns as his subscription to the professional periodicals and his dues to his State Association.

Do not neglect to contribute your share of knowledge and experience to the columns of the veterinary press. I would suggest that you do not confine your reports to those of cases of exceptional and rare occurrence, for it is often in some little point in connection with routine manipulation or in the treatment of the more common diseases that the greatest benefit is derived from reporting and recording your experience.

A recent poll of one of the most prosperous of the Western States developed the amazing fact that there were nearly one hundred graduated veterinarians in that State who are not subscribers to any American or foreign veterinary journal. Any comment is unnecessary. There are two things, I am sure, that every progressive up-to-date veterinary practitioner of New Jersey will not be found wanting in—one is, he will be found to be a staunch and earnest member of the Veterinary Medical Association of New Jersey, and the other is, that he is a subscriber to at least one veterinary periodical.

It seems to me that it would be a great advantage in many ways if we had a State Board or Bureau of Animal Industry with a State Veterinarian, who would be Chief of the said board or bureau, somewhat on the same plan as the United States Bureau of Animal Industry, instead of having veterinary matters of the State connected with several of the different State bodies, without professional directorship, as is now the case. It might be well for this Association to appoint a conference committee to see if a plan could not be adopted that would be satisfactory to the State Board of Agriculture, the State Board of Health, the Tuberculosis Commission, and all concerned. It is all right to have veterinarians make inspections

and so on, but there should be a State Veterinarian at Trenton to direct the work along modern scientific lines. As soon as plans can be perfected that will be satisfactory to the various bodies concerned, I would recommend that steps be taken to secure the necessary legislation. Our agricultural and dairy interests, as well as the preservation of the public health, demand that a qualified veterinarian be the chief or director of the veterinary work of the State.

Gentlemen: Just think of it! The Legislature last winter authorized our good friend, the State Entomologist, to chase mosquitoes, and appropriated \$10,000 for his use (which was proper), yet the animal wealth of this entire State, including our great dairy industry, supplying much of the milk for the cities of New York and Philadelphia, is left without the supervision of a qualified State Veterinarian at Trenton.

I cannot refrain before concluding this address from making a few personal remarks. The loyal and enthusiastic support that every officer and member of this amalgamated association has given me as your executive officer during the past two years, has been such as to strengthen my hands, without which the achievements we recount to-day would have been nothing but poor, miserable failures.

This gavel, the silver service, as well as the resolutions you passed on the loss I sustained in the terrible conflagration on the night of February 9th last (when my offices, veterinary buildings and appointments, pharmacy, library, instruments and many other things that money cannot replace, were destroyed), were kind tokens from you that bespeak more than language can express.

You may be interested in knowing that the original draft of our veterinary law was destroyed in that fire. It was in Senator McKee's office, where he and I had gone over it together, the day previous. This must be a good law, for it can truthfully be said that neither fire nor flood could impair or kill it.

Aside from general practice, I see two large uncultivated and sadly neglected fields for the qualified veterinarian. One is

that of animal husbandry and industry. The other is that of veterinary sanitary medicine and police. The public are beginning to demand that adequate safeguards be placed around their meat and milk supply, and I am sure that this Association in its wisdom will not shirk its duty, but on the contrary place the veterinary profession in a position to deal successfully with the important issues that are sure to confront it. Let every veterinarian continue to do his part, be it little or much, and the time is not far distant when the profession will have the satisfaction of having one of its own members as the director of veterinary affairs at Trenton, and the public the benefit of a veterinary service operated upon the basis of modern scientific knowledge and experience that will add, in a large degree, and in a real and substantial manner, to the health and wealth of the people of our beloved State.

STATE VETERINARIAN BRIMHALL, of Minnesota, visited Massachusetts in December to familiarize himself with foot-and-mouth disease and to fortify his State against possible infection.

A GERMAN HYGIENIC MILK SUPPLY EXPOSITION.—Formal notice has been given the officials at Washington, D. C., that a "hygienic milk supply exposition" will be held in the German city of Hamburg on May 3 to 10 next. The first section of the show will include dairy cows of various breeds, stable fittings, dairy foods and testing of and management of milk in stable and elsewhere. The second section will include veterinary control of milk, legislation relating to dairies and milk supply, diseases of milk cows, infection of and by water, sanitary management and kindred matters. The third section will deal with the sanitary conveyance of milk, Pasteurizing, cleansing of cans and other vessels, machinery, bottling and so forth. Section four will deal with the management and sale of milk. The next section will include milk legislation and administration, laws, enforcement of same and the like. The last sections will deal with the scientific examination of milk, preparations derived from milk and machinery and apparatus for the treatment of milk in the household. It is understood that American manufacturers propose to make an extensive exhibit of dairy appliances made in the United States.—(*Breeder's Gazette.*)

SCLEROSTOMA TETRACANTHUS.

BY DR. N. I. STRINGER, WATSEKA, ILL.

Read at Chicago before Illinois State Veterinary Medical Association.

In presenting this subject for your consideration I do not do so with the thought of adding anything new upon the life history or anatomy of this parasite.

I appreciate listening to a scientific paper and its discussion, but I am not competent to write such a paper; so will endeavor to present something that I have seen in actual practice, which I hope will be of interest to my brother practitioners and possibly may assist them to correctly diagnose a peculiar case now and then that may in the past have been a puzzle.

It has been my fortune, or misfortune, to have seen a good many cases of death in the equine race caused by these parasites. There does not seem to be much literature upon this subject. The ravages of this parasite have usually been attributed to the *Strongylus armatus*.

From what knowledge I have been able to gain regarding the two parasites macroscopically, they look very much alike, but, as I understand, the *armatus* infest the blood vessels, producing aneurisms, embolisms, and thrombosis, while the *tetracanthus* confine themselves wholly to the intestines.

Fröhner only makes a mere mention of them. Neuman does not give a very full description of them.

Dr. J. F. Winchester, in 1892, read a very extensive paper before the U. S. V. M. A. about the armed sclerostome (*Strongylus armatus*), but did not mention anything about the *tetracanthus*. This most instructive paper may be read by referring to page 288 of the proceedings of the U. S. V. M. A., 1892; also to page 359, AMERICAN VETERINARY REVIEW, October number, 1892.

In the January number, 1893, of the AMERICAN VETERINARY REVIEW is published a paper read before the Iowa State Veterinary Medical Association by Dr. G. L. Buffington upon the subject of this paper.

The description and round of life is given by Dr. Buffington, as follows: "The *Sclerostoma tetricanthum* is one of the very small nematodes inhabiting the intestines of the horse. The body is slightly tapering anteriorly, of a reddish-brown color when preserved in alcohol, but while in the intestinal canal of the host the larger ones are of a bright red, and the smaller ones a dirty white color. They are from one-fourth to three-fourths of an inch long, the females being a little larger than the males. The mouth is circular, with a salient rim that has a crown of triangular teeth, and outwardly six papillæ, two lateral, small, and on each side of them two others, conical and very prominent. The buccal capsule, cylindrical. The caudal pouch of the male is simply excised on the ventral surface. The posterior lines are trifurcated, the middle doubled, and the anterior cleft. In the female the tail terminates in a point and the vulva is very near the anus. The digestive canal is complete. The ova are segmented in the uterus. They are laid in the intestine of the host, passed out with the faeces, and if the proper conditions, warmth and moisture, are met with, will hatch out in a few days. The external phases in their development are, according to Bailliet, analogous to those of the *Strongylus armatus*, and are about as follows: If, after the ova are hatched out, they gradually grow, their integument becomes folded and forms a kind of sheath in which the worm moults. It is at this period they enter the body of the host in the water the animal drinks, or perhaps on the green forage when on low, damp ground, pass into the intestines, and it is probable that they encyst themselves directly into the mucous membrane of the colon and cæcum without penetrating the circulatory apparatus. At least, no wandering parasites of this kind have ever been observed. They remain imbedded beneath the mucous membrane until they attain sexual maturity, when they again enter the intestinal canal to pass the remainder of their lives."

I think the above quotation from Dr. Buffington gives about all that is known of the life history of these parasites.

About 1891 or 1892 was my first experience with the *Sclerostoma tetracanthum*. A Mr. M., living near Fairbury, Illinois, where I was practicing at that time, called me to see two yearling colts that were acting very strangely, and, as he thought, were starving, as he had just brought them home from a hired pasture. I think it was sometime in June or July. They seemed to be very weak and could hardly walk and could only arise with much difficulty when down. They were somewhat emaciated. One died in a few hours after I saw them, and the other died a day or two after the first one. I was somewhat puzzled, but I always take the opportunity to hold a post-mortem whenever a case terminates "favorably," especially those of a peculiar nature. The large colon and cæcum contained uncountable numbers of the parasites; they are found adhering loosely to the mucous membrane. That same season I saw in that vicinity six or eight cases ranging from yearlings to five-year-olds. The animal usually dies in from a few hours to three or four days after they show signs of the trouble. The usual symptoms first noticed are a weak, staggering gait, haggard expression. When forced to walk it seems to completely exhaust them. They usually quit eating; in some cases that I have seen they would attempt to eat and drink, but could not swallow either food or water, there seeming to be a paralysis of the entire alimentary tract. Occasionally one will go down shortly after showing symptoms and become delirious, struggling and frothing at the mouth; the frothing at the mouth, I think, is due to the inability to swallow the saliva. Those of this weak, trembling, staggering gait will show pallor or blueness of the visible membranes.

Those that are struggling and delirious may show a livid color of the membranes. Fæces in most cases scant, urine of a very high color, usually of a very dark red, and in some cases almost black.

Post-mortem.—Tissues almost bloodless. When large blood vessels are severed, blood flows like water, is very dark, almost black in color; it seems to be entirely defibrinated, no coagu-

lum exists anywhere. Bowels very pale in color, in some cases small haemorrhagic spots may be seen dotted over the peritoneal surface of the large colon and cæcum; apex of cæcum may be considerably congested and gangrenous. In two or three cases I have seen perforations of the bowel, allowing the fluids to escape into the peritoneal cavity, causing peritonitis, the animals showing symptoms of a severe colic before death.

I will cite a few cases that I have had to deal with:

August 23d, 1899, about sundown I was called to Mr. B.'s, near Eureka, Ill. On my arrival I found a mare lying on the ground on her side, spasmodic paroxysms of struggling, and pawing with fore feet, hind limbs motionless. These paroxysms took place every few minutes. She would pay no attention to the stroke of the whip or being spoken to. Temperature 101° , respiration 30, pulse 60. Died next day (24th) about noon. On the same evening when called, a horse four years old, was lying down in the barn. I gave him a stimulant; he got up in about an hour. We then got him out of the barn; before morning he also went down and could not get up; soon became delirious, and grew worse very fast. We killed him the next afternoon.

On the same evening (23d) found two mares, staggering gaits, walked with much difficulty, unable to swallow anything. I gave each a capsule of aloin, but do not think they reached the stomachs. One of the mares died on the night of the 25th, and the other about five days later; her exit was hastened by the administration of a lot of concoctions during my absence by the owner and an old moss-backed empiric. On account of the animal not being able to swallow, the dope naturally found its way into the lungs, producing inhalation pneumonia. The empiric's diagnosis of the trouble was "pizzen" (poison); the owner contended that it was witches that were doing the mischief. You may imagine how I enjoyed the situation; the owner would not believe my diagnosis, neither would he discharge me, but insisted upon my staying on the field. In the first three cases upon post-mortem

the mucous membrane of the large colon and cæcum were covered with the *Sclerostoma tetracanthum*. In the last case owing to the decomposed condition of the animal they seemed to have been destroyed. The lungs were gangrenous.

There were six horses in the barn, and they seemed to be feeling well except one that was showing slight symptoms of trouble. I gave all six ol. lini. and spts. terebinth, followed in thirty-six hours with aloin, also ferri sulph. and nux, twice a day. On the morning of September 1st the one that was not feeling well went down and could not get up. He was a driving horse, five years old. I raised him with a sling, by the aid of which he was able to stand, drank water and ate some food; being able to swallow, which none of the other affected ones could do. Before slinging him up he was pawing and showing similar symptoms to the others, but not so severe. They let him out of the sling in three or four days, when he went down and the same symptoms returned. They again raised him, when he seemed to be all right. He got out of the slings twice after that during the next two weeks, when the same symptoms would return. In six weeks he was turned to pasture and showed no more signs of the trouble. The funny part of the programme was that just before the horse was turned to pasture the owner consulted two lady clairvoyants in Peoria, who agreed with him that all his trouble was caused by a certain man, who was his enemy, working under the power of the witches, and for a certain consideration they could break his charm. The owner accepted their proposition, went home and took the horse out of the sling and let him go. But I cannot help but give the credit to the sling and the nux and iron.

One very peculiar thing about the effects of these parasites upon some animals where the symptoms develop slowly and the animal will partake of food and water, if they are kept on their feet by the aid of a sling and treated with vermifuges and tonics, a good many of them will recover.

Six years ago I saw some cases near Fairbury with Dr. Presler for Mr. Pense, seven dying out of the twenty head of young

horses in that pasture. Dr. Presler reports that last summer a year ago in that same neighborhood one man lost thirteen head of young horses. A year ago last September, in Dr. Presler's absence, I was called to the same locality to see some work horses that were affected with the tetracanthus. The man lost three out of the four that he owned.

In September, 1900, a Mr. G., near Milford, Ill., lost five out of six head of horses, ranging from five to fifteen years old. Two of these were mares with colts by their sides. One mare lived about eight days after she began to show symptoms of the trouble. Part of the pasture that these were in was a woods pasture that had recently been used for hogs, and there were a good many hog wallows filled with water.

This year I have seen four cases. Post-mortem showed cæcum and large colon filled with faeces, mucous membrane and faeces covered with tetracanthus, apex of cæcum congested and about a pint of the long white worms (*lumbricoides*) packed in it.

Was called to Cissna Park to see one case, a very large sucking colt, five months old; died a half hour before my arrival; held post-mortem; conditions same as above case, except there being no congestion of apex of cæcum nor *lumbricoides* present.

On the fourth of last month (November) I was called six miles east of Watseka to see a yearling colt that was staggering about, showing the same symptoms of its mate, so the owner told me, that died about three days before. We found this one lying down when I got there; we assisted it to arise, but it walked about with much difficulty; it voided urine soon after it got up; urine a very dark red. It soon laid down, and did not get up again. It died next day about nine o'clock. I held autopsy, and I have never seen as many tetracanthus in any one case as I saw in this one. These two colts were alone in a pasture that was part woods and some of it low along creek.

The horses that died at Eureka were watered from a shallow well and dipped nearly dry every day.

All other cases that I have spoken of were in low pastures or where water stood in puddles; some were part woods.

PARTURIENT PARALYSIS.

BY DR. D. R. KOHLER, BOYERTOWN, PA.

Read before the Semi-annual Meeting of the Schuylkill Valley Veterinary Association, at Reading, Pa., Dec. 17, 1902.

The subject chosen for this occasion is parturient paralysis. This disease is known by a great number of names, such as "parturient paralysis," "parturient fever," "parturient apoplexy," "milk fever," etc. Now, I merely want to mention some of the facts, as time does not permit to go into details. The rest I want to leave to you for discussion.

Definition.—This is a parturient derangement, characterized by suppression of lacteal secretion, congestion of the brain, and paralysis.

The name "milk fever" is very misleading, as sometimes there is no fever present, and the temperature is subnormal.

Parturient paralysis appears to occur wherever milk cows are kept, but is of more frequent occurrence in dairy districts, because there they are fed stronger and are kept especially for milking purposes, and the heavier the milker, the more subject to this derangement.

Causes.—As to the causes, there may be a great many, although of late years Schmidt's theory has been much advocated (that is, of the generation in the mammary glands of a poisonous substance from the over activity of the epithelial cells of this gland; that is, that a large quantity of blood goes to the udder after birth, which formerly used to supply the uterus and foetus before birth). This poisonous substance being carried into the circulation to various parts of the body, which act on the nervous system, and characterize the symptoms. This disease occurs principally in cows which give a large quantity of milk; it rarely occurs after the first calving, nearly always after the third or fourth calving. It rarely occurs in old cows; the most dangerous time is just in their prime of profit, and occurs only in cows which appear to be in the best spirit and health.

Symptoms.—This disease usually manifests itself within

twenty-four to forty-eight hours after parturition, and sometimes occurs a week or month after parturition. The first symptoms noticed are : the cow becomes restless, stamps, strikes with hind legs, grinds her teeth, has spasms of some of the muscles, then paralysis comes on. She gets weak, staggers and falls. As the disease advances, they usually throw their heads from side to side, and often stretch out flat on the ground. By this time they become unconscious, the eye becomes dull and insensitive to the touch, the pupil dilated, the pulse weak, small and from 60 to 120 per minute.

Course.—The course of this disease terminates usually in from three to four days ; either recovery takes place or they die in some instances. Profuse diarrhoea sets in and they die from inflammation of the bowels, and complete paralysis of the hind quarters is sometimes a complication. Pneumonia sets in sometimes as a surprise after a recovery of a week or so, usually due to some of the medicines passing into the lungs while drenching.

The Diagnosis is usually easy, as the disease is nearly always well developed before the veterinarian is called.

Treatment.—The treatment may be divided into two divisions, namely, preventive and curative treatment.

Preventive Treatment.—Cows that are in the latter stage of gestation should have hardly any grain, plenty of exercise, and the bowels should be kept in a good condition by giving salines ; after calving, the foetal membranes, if not passed, should be removed as early as possible.

Curative Treatment.—The treatment that I obtain the best results from is as follows : Internally I give

R	Sulphate strychnia,	grs. ii
Tr.	Barbadoes aloes,	ʒ ss
	Nitrous ether,	ʒ ss
	Aromatic sp. ammon.,	ʒ ss

Same to be repeated in an hour's time ; then every two hours till signs of recovery take place, then only every three hours that only to be given with a small vial, as then there is not such

great danger for any medicine passing into the trachea. Then I use Schmidt's treatment (iodide of potassium) for the mammary glands, of which you are all aware. Make the quarters or stable as comfortable as possible; keep the cow well propped up on the sternum, and turn her from side to side every two hours, apply some strong liniment over the loins and blanket her well. As the cow is nearly always unable to urinate when in this condition, the urine should be removed about twice daily as long as necessary. The rectum should be emptied from hard faeces if any is present. After they gain their feet I reduce the strychnine. When they commence to eat and drink be very careful and give them only small quantities at a time.

As there is much to add to this paper, I leave the rest for you for discussion.

ASSAY OF DIGITALIS LEAVES.—H. L. Ziegenbein (*Archiv.*) states that the estimation of digitoxin in digitalis leaves is not a reliable test for the medical value of the drug, because the proportion of this body present bears no relation to the toxicity of the leaves. It also shows that the alcoholic extract of the leaves is from three to four times as energetic as a solution of digitoxin of the same relative strength. The statement that storing diminishes the therapeutic value of the drug is confirmed, also that the leaves obtained from some sources are much more potent than those from other sources.

THERMAL DEATH POINT OF TUBERCLE BACILLI.—R. T. Hewlett (*Trans. Aberdeen Congress*) as the result of experiments with regards to the resistance of tubercle bacilli, arrives at the following conclusions: (1) As regards a non-virulent laboratory culture, a temperature of 60 deg. C. acting for ten minutes is sufficient to destroy the vitality of the bacilli. (2) A temperature of 65 deg. C. acting for fifteen minutes destroyed the infective properties of tubercular sputum in five out of six instances. (3) Tuberculous milk heated to 60 deg. C. for thirty minutes lost its infective power. (4) Tuberculous milk heated to 63-65 deg. C. for twenty minutes in the Allenbury's Pasteurizer lost its infective power. (5) In all probability, pasteurization in which the milk is retained at a temperature above 65 deg. C. for not less than twenty minutes is efficient, especially if no film is formed.

INTESTINAL ANTISEPSIS.

By J. H. CRAWFORD, HARVARD, ILL.

Read before the Illinois State Veterinary Medical Association, Dec. 2, 1902.

A more appropriate name might have been chosen, but, as Shakespeare says, "What is in a name?" Therefore, in introducing the subject, we will consider it in three different phases: (1) Why we should use them. (2) What we expect to accomplish by their use. (3) Which of the numerous antiseptic agents can we safely use with a fair prospect of obtaining results?

Chemical investigation has shown that many diseases depend upon the products of putrefaction and fermentation, rather than upon the direct action of microbes upon the tissues. These products are called ptomaines, which resemble vegetable alkaloids. These alkaloids, however, are not all poisonous; the poisonous ones are termed toxins. And it is those with which we have to deal. As toxins owe their development to the microorganisms, it follows that toxins formed depend on the material acted upon, the conditions under which the putrefaction goes on, and probably the health of the animal in whose body these processes are taking place. Some bacteria require oxygen, others do not, consequently the toxins manufactured by those two classes of organisms differ very materially. Metabolism is taking place everywhere within the body, with the result that the complex molecules of brain and muscle in their catalysis pass through intermediate stages, and are finally resolved into carbonic acid, water, and ammonia. We do not know what part oxygen plays in the processes of putrefaction, but the researches of Pasteur have shown that bacteria play a very important part in the disintegrating processes of organic matter, and in no part of the body is this more true than in the intestines.

Self-poisoning from the absorption of toxic substances secreted in the intestines is only prevented by the activity of the excretory organs of the body, chiefly the kidneys and liver, the

liver acting the part of a sentinel to the material brought by the portal vein from the alimentary canal.

Therefore, when we consider the amount of toxic materials in the alimentary tract of a diseased animal, when suffering from any of the infectious or contagious diseases or any of the various digestive troubles, particularly where there is considerable fermentation going on, also in diarrhoeas, parturient paresis, rheumatism, laminitis, and other diseases too numerous to mention, it can be readily seen that the use of intestinal antiseptics in such cases are not only necessary but imperative.

We will pass on to the second consideration, that is, what we expect to accomplish by the exhibition of antiseptics in the alimentary tract.

Undoubtedly the first indication is to get rid of the material which gives rise to the putrefactive and fermentative processes. This is most readily accomplished by inducing catharsis. Unfortunately, this is not always a safe procedure in the horse. The next best thing is to come as near that point as possible, by dieting and by the use of the proper laxative remedies, such as the condition indicates. On the other hand, free catharsis may be induced by eserine, arecoline, barium, aloes, aloin, oils, etc. Having cleared out the alimentary tract, our antiseptics are now in order. Having selected our remedies according to the conditions present, by their use we expect to prevent, as far as possible, the formation of various toxins and gases; in other words, to get the alimentary tract in as aseptic a condition as we can, and keep it so. Of course, we understand that it is absolutely impossible to get the digestive tract in a purely aseptic condition, but there is no doubt that a great deal can be accomplished by the administration of antiseptic remedies, and, in so doing, we will undoubtedly modify to a large extent the pathological processes induced by the absorption of toxins into the system.

We now come to the point where we have to select remedies, and in our selection we must be careful to administer only drugs that are reliable, and in doses that are not in themselves poisonous; for in killing the microbes we must not destroy the

patient. At the same time, we know that the best way to disinfect the stomach and intestines is to restore them to their normal condition. Amongst the large numbers of antiseptic agents at our disposal are the various members of the coal-tar group, such as carbolic acid, creolin, salol, creosote, naphthalin, and beta-naphthol. There is also bismuth salicylate, salicylic acid, iodoform, boric acid, quinine, charcoal, and there is also the various mercurial salts, which are all antiseptic and also more or less poisonous.

However, we may combine several of these agents, and out of them get a fairly reliable and safe antiseptic remedy. Of late, I have used a remedy composed after the following formula :

Carbolic acid,	ʒ iiij
Boric acid,	ʒ iv
Oil of gaultheria,	ʒ i
F. E. capsicum,	ʒ iss
Glycerine,	ʒ viiij
Alcohol,	Oijj
Aqua, q. s.,	Ov

This is given in doses of from one to two ounces, and can be repeated as necessity requires. The above formula is open to criticism, no doubt. It may be called conglomerate, shot-gun, or anything else. It may also be said that as good or better results can be obtained by one single drug. That may be so in any one disease, by selecting the drug best suited to that disease, but for a good general intestinal antiseptic the above has proven successful in my practice, and a careful summing up of the various actions of the drugs used will substantiate that proposition. Expense is also a very important point on account of the large doses used. On that point it fills the bill admirably. It can be used in colics, the pneumonias, and, in fact, in all febrile or digestive troubles as a general intestinal antiseptic. In conclusion, I would say, that, by the presentation of this paper, I hope to bring out a good sharp discussion that we may all profit by, and that it may stimulate us to give the subject of intestinal antiseptics more thought, and by so doing evolve new ideas that may redound to the benefit of veterinary science and veterinary practitioners in general.

REPORTS OF CASES.

"Careful observation makes a skillful practitioner, but his skill dies with him. By recording his observations, he adds to the knowledge of his profession, and assists by his facts in building up the solid edifice of pathological science."

TUMOR AND FISTULA OF THE ABDOMEN IN A HORSE.

By W. C. MILLER, D. V. S., House Surgeon American Veterinary Hospital, New York.

Dr. Doyle, of this city, was called in September to see a chestnut gelding, which had a discharge from the abdomen, and which the owner said was noticed a few days previously.

Upon examination he found a slight swelling on the abdomen, a few inches posterior to the umbilicus, and having a small opening in the centre, which was discharging slightly. Upon probing, it led into a tract leading upwards and backwards, following the direction of the abdominal wall for about six inches. Temperature $103\frac{1}{2}$ ° F., respirations accelerated, but eating well, and working better than any other horse in the stable. This horse had been owned but a short time by the client of Dr. Doyle, having been previously owned by a New York milk concern, and it is possible that the animal may have been in that condition for sometime.

A short time after Dr. Doyle saw the horse he noticed a doughy swelling, about six inches in diameter, about three inches from the opening. He opened the swelling, which he found to be filled with a large quantity of what looked like blood-clots, and was very foetid. This he removed and dressed the wound, packing the cavity with antiseptic gauze.

The horse was kept in for a few days, when he was put out again to work, which he did willingly and well. The wound was dressed continually, but there always remained a slight thin discharge. Temperature varied for ten weeks between 102 and 105° F., and appetite remained excellent.

On Nov. 15, the horse showed colicky symptoms, and Dr. Doyle advised the owner to send him to this hospital, which was done on the 17th.

Upon examination a small, hard swelling was noticed upon the abdomen, with an opening in the centre leading into a tract, allowing the probe to penetrate upwards and backwards nine inches along the abdominal wall, not penetrating it. No tract in any other direction and a slight discharge issuing from the opening.

The tract was injected with antiseptic solutions, as the discharge was very slight, and did not indicate opening at the time. During the next few days the horse's appetite was very good and temperature averaged 102° F., but having a dull appearance. The fifth day after being here the animal had an attack of colic which lasted about two hours—giving cannabis indica and opium to relieve pain. His appetite became poor then, and the animal became weaker. On the seventh day he had a very bad attack of colic, lasting all day—horse gradually getting weaker, requiring stimulation. Pulse very weak, and towards evening imperceptible. His correct temperature could not be taken on account of the flabby condition of the rectum, and at 9.30 that night he died.

Post-mortem.—An incision was made following up the direction of the probe leading into the tract and the tract opened, the walls of which were thickened very much and easily broken down. As this did not reveal anything to any satisfaction, the tract not penetrating the abdominal wall, the abdominal cavity was examined, and at the seat of the opening of the tract, a short space from the umbilicus, there was a very large hard thickening, covering an area of about seven inches, with a minute opening into the abdominal cavity.

The large colon was firmly adherent to the abdominal wall at the point covering the entire extent of the thickening. This was dissected away and the intestines removed, and a large abscess, the size of a man's head, was discovered on the upper part of the colon over the adhesion. This was opened, as was the colon. The abscess was filled with a large quantity of cheesy matter, in the centre of which was some small calcareous deposits. The abscess communicated with the interior of the colon by a very small opening, which was entirely surrounded by a large growth resembling a cauliflower, covering it up so that it did not permit the abscess to discharge its contents into the colon. The peritoneum was inflamed in many places, and a few small inflamed areas upon the small colon were also noticed.

TWO CASES OF TETANUS.

By THEO. A. KRAGNESS, M. D. V., 730 W. 63d St., Chicago, Ill.

CASE No. I.—June 21st, I was called to attend a mule. The following history was given by the attendant on arrival:

Three weeks ago he picked up a nail. The nail was removed by a blacksmith, the wound dressed, no lameness followed.

The animal presented all the symptoms characteristic of tetanus—such as muscular rigidity, elevation of head and tail, dropping of membrana nictitans, outward curvature of the hocks and trismus.

The animal was a fine specimen of his species: dark brown, standing 17 hands, weighing sixteen hundred pounds, and cost his owner two hundred and fifty dollars three months before accident. As I had just taken up a new location and the owner was a new client, I was desirous of making a good impression by affecting a cure if possible. Consequently I was at odds as to what treatment to prescribe. Whether to pursue the "old line" of treatment or to use tetanus antitoxin was the question I had to decide. Having had a wide experience with antitoxin while house surgeon at the McKillip Veterinary Hospital (Chicago) with negative results, I finally decided in favor of the "old line" treatment, and proceeded accordingly.

Treatment.—I daily administered mercurous chloride in 30 grain doses, given as an electuary; also potassium bromide, 15 gr., in pail of water every six hours.

The patient showed no change until July 1st, when the rigidity of the muscles became suddenly increased and the jaws completely locked; the patient showed a great desire for water.

I placed the patient in slings and changed the treatment, discontinuing the calomel and administered fl. ex. gel-selenium, which was pushed to the limit. This condition continued for three days, when a general relaxation took place, which was accompanied by increasing thirst (the patient drinking seven pails of water inside of an hour), which was accompanied by excessive urination, which pointed to a diabetes. It was also noticed that drinking induced violent coughing.

With the cessation of trismus the appetite became ravenous. The patient was allowed green food, of which he partook enormously. This condition continued until July 18th, at which time I made my regular morning call and found the patient much distressed. Respiration 50; pulse about 100, wiry and intermittent, nostrils dilated, mucous membranes deeply injected, temperature 105° F. Upon careful examination I found the animal had hypostatic pneumonia. This continued with a little change for the better (except for failing appetite) until July 26th, at which time the patient ceased to take nourishment. Toward evening of the same day the patient showed symptoms of colic. He pawed, kicked and threw himself violently about in the slings. I diagnosed impaction of the colon,

and administered anodynes and physic and gave nerve stimulants and copious enemas, all of which seemed to have very little effect upon his condition until the evening of the third day, when he had one ordinary movement of the bowels. The colic continued until the fifth day, when I took him out of the slings, had him exercised one-half hour three times a day. At this time muscular relaxation was rapid, the appetite improved, peristalsis reestablished, but no normal passages until the tenth day. With proper bowel movements established, the appetite and general condition improved, but the desire for water and abnormal urination continued, but gradually disappeared. He received tonics, improved rapidly in flesh and is doing regular work again.

CASE NO. II.—On July 24th I was called to attend a horse in which I diagnosed tetanus. The patient had been attended by another veterinary surgeon, who advised the use of antitoxin, but the owner objected to the cost. I discouraged the use of antitoxin and administered the same treatment as in case No. I. The patient being in a private stable, where he would receive the best of care, I decided not to put him in slings, but used all precaution against accident. The animal made an absolute recovery.

Here are two cases which my readers may take for what they are worth. I have used both the old and the new (or antitoxin) modes of treatment, and in the future shall continue on the old line. I think there is something yet to be done before antitoxin treatment for tetanus proves successful.

WHERE I FOUND MY CANULA.

By NEWTON G. LE GEAR, V. S., Waco, Texas.

On Aug. 15, 1901, I was called to see a Jersey cow, about eight years old, with distension of the rumen. After trying for one whole night to relieve her condition by ordinary means, and failing, I decided to perform rumenotomy. But let me state that I had a two-fold object in operating : one to relieve the cow's stomach, and the other to extract a lost canula, which had been drawn in by peristalsis.

Standing the cow with her right side against the inside of the barn, I made an incision through the left flank into the paunch ; and after removing nearly a wash-tub full of coarse, undigested food, I began a vigorous search for the lost instrument. Expecting, of course, without stopping to think, to find

it on the inside of the incised viscus; and, failing to do so, after a long search, I gave it up in despair.

As I was stitching up the wound in the rumen with catgut, I accidentally placed my fingers against the lost object (it being external to and upon the paunch), and extracted it at once. And finally suturing peritoneum, muscles and skin all at once with silk, and applying a bandage around the body, the operation was completed.

In about four or five days this same cow gorged herself again, and the distension caused her side to give way, but the rent was not where I made the incision, it being exactly where the stitches went through, a little to one side. This opening we dressed antiseptically, and succeeded in closing it in two or three weeks. And in about four weeks she dropped a fine calf and did exceedingly well.

About one year afterward she was sent out to pasture, and while there, contracted Texas fever and died Oct. 5, 1902. The post-mortem lesions showed that extensive adhesion had taken place between the rumen and the abdominal wall.

EXTRA-UTERINE PREGNANCY IN EWE.

By B. F. KAUPP, D. V. S., Kansas City, Mo.

Sheep, about four years old, was slaughtered. The abdominal cavity upon being opened was noted to contain a tumefaction of considerable size, adhering to the abdominal wall and surrounding tissues, one end laying close up to the left horn of the uterus. The tumefaction upon being opened was found to contain an apparently fully developed foetus, which was in a state of decomposition. At this time there was a fibrous capsule surrounding the mass. The uterus was normal and gravid at this time, containing a foetus perhaps three months old and in a perfectly normal condition.

NORMAL SALINE SOLUTION IN AZOTURIA.

By J. B. CAUGHEY, D. V. S., Columbiana, Ohio.

First of January had call to a horse that had been down five hours with azoturia. Gave half an ounce of potassium iodide, followed one hour later by half a gallon of normal saline solution, injected in the ilio-lumbar region. In forty-five minutes the horse got to his feet, and made a good recovery. This is the third time I have used it, with two recoveries.

EXTRACTS FROM EXCHANGES.

GERMAN REVIEW.

By ADOLPH EICHHORN, D. V. S., Bureau of Animal Industry, Albany, N. Y.

PARALYSIS OF THE OBTURATOR NERVE, IN A HORSE AND A DOG [*Prof. Schimmel*].—A horse was brought to the clinic of the Veterinary School at Utrecht, with the history that the animal became suddenly lame on the off hind leg, and revealed on examination the following condition: Supported more on its off hind leg, the horse placed this leg very markedly outward, which was more pronounced when the patient was urged to move. By doing so, the horse moved the leg in an outward curve, striking the foot on the ground, in a clumsy way. Pain and other inflammatory symptoms or fracture were not detectable. On the following day, the horse was unable to rise, and therefore was placed in slings. The diagnosis of simple paralysis of the obturator nerve was not made on account of the strong abduction of the leg, but a rupture of the abductor muscles was suspected, in spite of the fact that there were no positive indications for it. Strong irritants were applied to the right hip, and the animal was kept in slings for two months, without resulting in the slightest improvement. By that time a marked atrophy of the muscles of the right thigh was noticeable. At the beginning of the third month, the horse was removed from the slings, and soon a slight improvement was noticeable, in that the animal was able to get up without assistance. Exercise was given, from which rapid improvement was observed, and in a short time complete recovery took place, the horse showing only very slight abduction on trotting, but this also disappeared . . . An Irish setter, nine months old, while jumping from a height, was injured by a falling ladder, after which the dog carried the left hind leg in an outward curve, which had a width of 6.5 cm. The muscles were greatly atrophied, especially so the abductors. Passive movements of the leg in all directions could have been practiced without the slightest pain to the animal. The diagnosis of paralysis of the obturator nerve was established, as all inflammatory symptoms were absent. Treatment, which consisted in rest, massage and rubbing with olive oil, was without any effects. After this, ex-

ercise treatment was given, which finally resulted in the desired cure.—(*Koch's Monatshr.*)

EXAMINATIONS OF THE EFFECT OF SUBLAMINS (MERCURY SULPHATE-AETHYLEN-DIAMIN) AS DISINFECTANT [*Dr. M. Blumberg*].—The application of sublimate, as known, has some disadvantages: it is a strong corrosive; some people can not endure it at all; produces roughness and brittleness of the hands. Prof. Koenig and the author therefore looked for another mercury preparation, which, with the same disinfecting effects, should not possess the disagreeable properties. The chemical factory, Shering, in Berlin, prepared, according to their suggestions, the combination of mercury citrate with aethylen-diamin. This preparation possesses the desired properties, but is a liquid, and therefore not very practical in practice. Shering succeeded in removing this inconvenience by using the mercury sulphate instead of the citrate, by which the product is a solid, named shortly sublamins. Blumberg, on the ground of his experimentations, came to the following conclusions, in regard to the properties of the new remedy: (1) It contains the same disinfecting power as the sublimate. (2) It has the superiority over it of not irritating the skin, in its strongest concentration. (3) By soiling the hand, with highly virulent infectious material, easily a still higher disinfecting power can be obtained than with the sublimate, on account of the possibility of a stronger concentration of the new agent. (4) The penetrating property is higher than that of sublimate. (5) Sublamin dissolves instantly in water, even in high concentrations, while the tablets of sublimate require considerable time. (6) Sublamin can be made in the form of tablets which are very soluble.—(*Muench. Med. Wochenschr.*)

PREVENTIVE INOCULATIONS AGAINST RABIES IN FOALS [*Fr. Kurtz and Dr. A. Aryezky*].—On a stockfarm, out of 47 foals, two manifested simultaneously typical symptoms of rabies, and both died on the following day. In examining the whole stock, on seven foals small scars were found, which under the circumstances must be considered as suspicious of infectious bites. How the infection occurred, could not be traced with certainty. After fourteen days, another of the foals became affected; it was one on which a scar was found. The remaining 44 foals were subjected to antirabic inoculations. The inoculations were performed with Pasteur's regular preparation. Between the first and second inoculation a period of five days elapsed, while between the second and third only two days.

The injection was made under the skin of the neck. A rise in temperature or any other effects were not observed. The inoculated animals remained healthy; no other case of rabies has appeared in six months, which is the period that has elapsed since the inoculations. These kind of inoculations were for the first time undertaken in veterinary practice, and prove that antirabic inoculations are applicable in the practice of large domesticated animals, and that when the bitten animals are inoculated at the right time, the development of rabies can be prevented.—(*Veterinarius*.)

EXPERIMENTS ON FEEDING TUBERCULOSIS IN CATTLE AND CALVES [*Prof. Dr. Schottelius*].—Two adult cattle and three calves were employed for these experiments. One cow and one calf served as control animals, the other cow and two calves were used for the experiments. The animals, which were very carefully examined for their condition of health, descended from a race which are bred in the mountainous region, and which, as experience proved, are very rarely attacked with tuberculosis. The calves were six weeks old, strong and healthy. For infectious material was used the sputum of tubercular persons. The same was given to the three animals in the state in which it was expectorated; the calves received it in milk, while the cow got hers with the green food. Each animal received about 50 gm. for one dose. From May 24th until August 29th, altogether 24 times, such infected food was given. Neither of the animals showed any disturbance in their health; there was no fever. Only on experienced inspection one could notice a slight decline in the condition of the cow and in one calf. On September 22d the animals were destroyed in the presence of the author and Prof. Dr. Schleggal. The autopsies revealed the following conditions: The two control animals were perfectly healthy, their lymph glands were free from tubercular infection. While in the three infected animals marked tubercular changes were found. In the cow, tubercular enteritis, marked swelling of the mesenteric glands, besides tubercular caseation and calcification of the mediastinal and bronchial glands, and, finally, a caseated tubercular pneumonia, with a few miliary tubercles on the pleura. In the calves the submaxillary glands were hypertrophied, and cheesy or calcareous; also some of the mesenteric glands showed tubercular degeneration. In all three infected animals all the lymph glands, not excepting those of the muscles, were much swollen and invaded with pale herds of necrotic appearance. The microscopic bacterio-

logical examination confirmed the microscopic conditions by proving the presence of tubercle bacilli in the parts showing pathological changes. The results of these experiments appear remarkable to the author from the point that in directing them, everything artificial not answering the natural conditions, was avoided, and because the test animals were exposed to such conditions as may arise in all cases where animals are attended by tubercular persons. But of not less importance are the results of these experiments, proving that human tuberculosis is transmissible to cattle.—(*Muench. Med. Wochenschr.*)

ABOUT THE SIGNIFICATION OF THE VESICULÆ SEMINALIS [*Voirin*].—The author undertook a series of experiments, on slaughter and experimental animals, to solve the question in mammalia, whether the vesiculæ seminalis should be considered as a receptacula seminis, or as a gland with secretory function for the generative fluid. The results of these experiments are the following: (1) The vesiculæ seminalis are accessory glands. (2) They are not reservoirs for the spermatozoa. (3) The name "vesiculæ seminalis" is therefore not appropriate and should be replaced by glandulæ vesicularis. (4) Spermatozoa are found only exceptionally in the contents of the vesiculæ seminalis. Whether the spermatozoa are always found in the vesiculæ seminalis in sexual excitement of long duration, is yet to be determined. The secretion of the glandulæ seminalis is mixed in the sinus urogenitalis, with the secretion of the testicles. (5) The secretion of the glandulæ seminalis is essential in impregnation.—(*Zeitschr f. Thierheilk.*)

FRENCH REVIEW.

By Prof. A. LIAUTARD, M. D., V. M.

DENTAL ORIGIN OF FISTULÆ OF THE SUB-ORBITAL REGION IN CARNIVOROUS ANIMALS [*Prof. Labat*].—These two rough drawings are taken from an article of the author illustrating two cases of a lesion, quite curious, which often attacks dogs or cats, and consists in a fistula developed below the eye. It generally appears as an insignificant wound, and is considered as due to a scratch, a bite or some ordinary cause. Still suppuration goes on, the wound takes a fistulous aspect, it remains for a long time, and the treatment prescribed against it remains without result. The cause is overlooked and the lesion continues.



When it has existed for some time the surroundings of the fistula are somewhat tumefied, the region is painful, and a probe introduced into the fistulous tract meets a rough and necrosed surface, and after careful manipulations arrives upon one of the roots of a molar tooth, the large superior molar. When the probe reaches that point, the exploration is painful and the animal groans more or less and rebels against further examination. There is an alveolitis of the tooth which may or not be accompanied with necrosis and perforation of the alveolar walls. The treatment is readily indicated, the extraction of the tooth, which sometimes requires a great deal of care on account of its size and of the diseased condition of the maxillary bone. Antiseptic dressing of the fistula and of the alveolar cavity are the indications of the after treatment. Although the operation is not serious, there are instances where general anæsthesia has to be resorted to, specially if the animal struggles much or as the cat scratches, no matter how well secured.—(*Revue Veterinaire*).

LUXATION OF THE ELBOWJOINT IN A HORSE [*L. Castagné*].—Although not very frequent, this accident is sometimes met in practice, and in some instances unattended with serious complications, as in the case recorded by the author. While trotting, a horse made a misstep and the shaft of the cart he is pulling slips inside of the elbow and the luxation takes place. The right fore leg is twisted outwards in the entire section below the elbow, and besides flexed at the elbow and the knee. The radio-cubital articular surface has been forced to a rotatory movement outwards on the humeral surface. The internal trochlea of the humerus corresponds to the radial only by its anterior border. For the deviation of the lower part of the leg, it is such that the anterior face of the knee has become antero-

internal and the solar face of the foot is postero-external. The olecranon, deviated outwards, overlaps by its beak the humeral trochlea. The flexion of the elbow, knee and fetlock is due to the abnormal twistings of the flexor muscles of those regions. From the knee down, the leg is twisted, flexed, stiff and unable to rest on the ground. The reduction was easy, because it was made early and remained perfect without bandage. The olecranon was seized with the left hand, with the fingers pressing on the projecting humeral trochlea. Having with the right hand flexed firmly the dislocated joint in raising the knee, the horse reared under the influence of the pain and everything went in its place, the reduction being produced with an elastic shock and a dull sound of coaptation, very different from those observed in reducing the ends of fractured bones. The reduced joint became the seat of a very severe tumefaction, the parts remain very painful, but towards the twenty-fifth day all had subsided and the animal was returned to work. The treatment after reduction consisted in slings, fine irrigations, massing with soap, gradual mobilization of the dislocated surfaces. Mild blisters and short repeated exercises were also resorted to.—(*Revue Veterin.*)

PERMANGANATE OF POTASSIUM IN ULCERATIVE KERATITIS [*Ben Danon*].—The author recommends the use of tepid solutions of permanganate of potassium, 0.5 per 1000, for swelling of the eye and iristillations. He records four cases where deep ulceration of the cornea existed and in which rapid recovery, which varied between eight and fifteen days, has been obtained, leaving only a small white speck on the cornea scarcely as big as the point of a pin.—(*Revue Veterin.*)

ENORMOUS TESTICULAR TUMOR IN A STEER [*Prof. Ch. Besnoit*].—For years the most various neoplastic lesions of the testicles were improperly classified under the head of "Sarcoceles," and for years also surgical interference with them was objected to under the idea that death was fatally, after a variable length of time, the result of an operation. The following breaks up the legend. A six-year-old steer, castrated by double subcutaneous torsion, several years before, has since a month a tumor of the scrotal region, which was first mistaken for an abscess and explored. Since it has grown very rapidly. This tumor from way up in the groin hangs down as far as the hock and involves the right testicle only. It is hard, irregularly bosselated, painless, very adherent to the skin, which is normal. The animal walks with difficulty, the right hind leg car-

ried in abduction. All the functions are normal ; negative results with tuberculin. Reserving the correct diagnosis of the growth, and with a doubtful prognosis, in the perspective of a fatal end if the animal was left alone, an operation was decided upon, and the tumor extracted by a circular incision on the scrotal sac, towards its superior third, dissection upwards as far as required and simple section of the superior peduncle. The operation left exposed the penis and the left testicle, entirely atrophied. It was also removed. An antiseptic dressing was applied and held in place with four quill sutures, and recovery went on without any difficulty. The tumor after it was removed weighed 8 kilos 500—(about 17 pounds). Careful microscopic examination revealed it to be of conjunctive nature. It presented in some points the structure of pure myxoma and in others that of myxo-fibroma.—(*Revue Veter.*)

THE MIGNARD—HISTORY OF ONE [C. Pagès].—Under this name is designated in France among slaughtering-house butchers the sheep that leads the others to the place of slaughter. Without him the flock runs away. This mignard is better treated than other sheep ; he is left loose in the house ; sometimes, but *very rarely*, he drinks blood and eats meat, refusing gradually his ordinary food more and more. After a year of this régime, he loses flesh and must in his turn be killed. At the autopsy there is always *fatty infiltration* of the liver and of some muscles. The author has observed one which was particularly carnivorous ; he sometimes would drink blood out of the pail where it was received ; oftener he would eat the tenderloins of steers ; but he preferred above all the intrathoracic fat of the calf. By degrees he refused dry hay, then green grass and finally oats, of which plenty was offered him ; he grew thin and was killed. At the autopsy the digestive canal appeared normal, the rumen smaller than usual, lungs manifestly whiter, the liver was twice its normal size and white, with scarcely reddish hue as in animals fed with milk. The meat has the aspect of that of a fat dog, alternately of a brown or of a pale greyish hue, although less marked. It was very good to eat. This story shows that (1) experiments in feeding to be significant must be carried on a long time ; (2) that herbivorous animals adapt themselves with more difficulty than generally believed to meat régime ; (3) the adaptation of the digestive canal seems easy ; that of nutrition is about impossible ; (4) the animal has no conscience of the danger, the stomach would warn him, the liver does not ; (5) after a certain time, return to the normal state is

impossible ; (6) the predominant lesion is the fatty *infiltration* of the pale muscles and of the liver ; (7) it is probable that this fat is principally of alimentary origin and that the *impossibility* (for the mignard) to be adapted to meat régime is principally due to the *impossibility to assimilate animal fats*, or at least that of large animals.—(Soc. de Biology.)

CANCER OF THE LEFT SAC OF THE STOMACH IN THE HORSE [MM. Petit and Fayet].—Epitheliomas of the left sac of the stomach have their origin in the œsophageal mucous membrane, which spreads in the gastric sac. Their histological characters are those of pavimentous epitheliomas. They are quite common. A twelve-year-old horse, which has never been laid up except for an attack of bronchitis or one of synovitis, seems to lose strength, his appetite becomes capricious, his general condition is poor; and finally he has enteritis with dull colics, looking at his flanks, kicking at his sternum ; the pains increase after meals. Deglutition is easy, but as soon as the alimentary bolus has passed the cervical portion of the œsophagus, the animal exhibits marked indications of painful anxiety. Death follows in an excessively lean and reduced condition, due to inanition. In opening the stomach a large cauliflower tumor is found about the middle of the large curvature ; it is as big as two fists, measures 18 centimeters in length, 10 to 12 in width, 8 to 10 in height. It is not pedunculated, but adherent by a very wide base. Situated on the boundary line of the sacs, it extends more on the left and pushes in front the mucous membrane of the right. The tumor is hard, firm and hollowed with pseudo-cystic cavities which contain puriform liquid of a repulsive odor. Another small patch of similar nature exists near the cardia.—(Bullet. de la Soc. Cent.)

ENGLISH REVIEW.

By Prof. A. LIAUTARD, M. D., V. M.

PARALYSIS OF THE BLADDER (*Th. Parker, M. R. C. V. S.*).—Veterinarians, like doctors, will sometimes disagree. A five-year-old chestnut gelding required the care of the author. The urine is passed only in small quantities, dribbling or coming away in jets ; the animal does not feel as well as usual. Another veterinarian, higher in grade, suspected the cause to be slight injury of the penis during grooming. Dr. Parker sees

him again the next day and finds him lying down, with respiration, temperature and pulse normal. The animal has no desire to rise and shows paralysis of the lumbar region. Rectal examination detects a bladder greatly distended, and 21 pints of amber colored fluid was removed. Treatment ordered: hand rubbing over the loins, good bed, light food, bicarbonate of potassium in drinks, *nux vomica* and gentian. Next day eight pints of liquid are again removed. The higher-grade veterinarian sees him again, makes a diagnosis of azoturia and orders aloes, hot blankets, hand rubbing, etc. In the presence of the difference of diagnosis between azoturia and that of paralysis of the bladder made by the author, the case was referred to higher authority and finally left over to Dr. Parker to treat as he thought best. His treatment was taken up again; in a few hours the horse showed improvement, and got up. Some little trouble occurred again between Dr. Parker and the other veterinarian, but finally he had entire charge, with the result that in a few days the horse got entirely well.—(*Veter. Record.*) [We might say, "lucky horse," and at the same time cannot help thinking how unfortunate it is to read of such petty difficulties arising between veterinarians and being made public.—*EDITOR.*]

FOREIGN BODY IN OESOPHAGUS OF DOG [*H. G. Simpson, F. R. C. V. S.*].—Bones are good for dogs, but they are not without danger for them. A young terrier had been feeding on chopped meat and shortly afterwards was seen making violent efforts to vomit. Nothing abnormal could be found on examination of the throat or of the oesophagus. A small probang introduced failed to reveal the presence of any obstruction. A purge and bismuth were given and partly rejected, but a second purge was kept. Vomiting seemed to subside, but the dog showed great pains. He died the next day. At post-mortem a piece of "jagged" bone was found, obstructing the oesophagus, which it had broken through and having punctured the left lung. In the chest there was a thick fluid mixed with the castor oil. On passing the probang it was found passing through the wound of the oesophagus, which accounted for the failure to detect the obstruction during life.—(*Vet. Record.*)

CALCULUS IN A HORSE—LAPAROTOMY [*J. B. Wolstenholme, F. R. C. V. S.*].—Although the attempt made was unsuccessful through a complication during the operation, the case is quite interesting. It was that of a horse, some ten years old, which had been taken with colic and no passage of faeces except the little contained in the rectum. Suspecting that the

obstruction was due to foreign body of some kind, rectal examination being made, a large calculus was detected in the left flank. The horse was cast, chloroformed, the parts received a thoroughly surgical cleaning, and with fullest aseptic precautions the operation was performed by an incision of nine inches made from a point a little below the spine of the ilium, downwards and forwards. What haemorrhage occurred was readily controlled. The peritoneum incised, the calculus pushed by an assistant, through the rectum, was extracted and the intestines closed by a continuous Lambert suture. Unfortunately, before the cutaneous wound could be closed, the animal getting from under chloroform, made one or two deep inspirations and a large portion of the intestines protruded. This it was found impossible to reduce, and the horse was shot. The calculus was a very rough "clinker," which must have damaged the mucous membrane much.—(*Veter. Journ.*)

TWO CASES OF DEATH FROM ANTE-MORTEM CLOTS IN THE HEART [*Henry Taylor, M. R. C. V. S.*].—In the first the total length of the clot measured nearly five feet. A gelding had contagious pleuro-pneumonia, with pleurisy predominant. The disease ran a typical course; the animal was doing well, but still had a certain quantity of fluid in the chest. At mid-day when he was fed he appeared as usual, and at 3 o'clock he was found dead. Post-mortem: Thoracic cavity three-quarters full of fluid. Large clot of blood in the right side of the chest, heart ruptured at the right auricle. Heart fatty and pale. In right ventricle, ante-mortem clot extending into the auricle. One is also in the left ventricle extending into aorta, and when gently pulled measures 44 inches. Continued beyond the quadri-formation of the aorta, it followed into one of the iliacs 13½ inches more. The total length of this clot was 57½ inches.

. . . . The second case was an animal suffering with cellulitis of near hind leg. Five days later he develops pleurisy. Being very lame in his hind leg he had to be kept in slings while treated. Improving nicely, he is found one day, after having laid down for some hours on the near side and being made to get up, unable to bear weight on the near fore leg, which besides is affected with muscular tremors, the scapular, triceps, extensors and flexor muscles being in a state of chronic spasm; and the shoe was making a tapping noise on the concrete floor. Notwithstanding treatment, this condition continued for a whole day. Auscultation of the heart was very difficult on account of the violent muscular twitchings. Slightly

relieved with spirits ether nitrosi, while morphia and bromide of potassium has failed; he at last was destroyed. Post-mortem: Hypertrophied heart; it weighed 12 pounds; ante-mortem clot in the right ventricle extending in the auricle and for 4 inches in the posterior vena cava. The clot prevented any action of the right auriculo-ventricular valve; it weighed 1 lb. 1 oz. Another clot about the size of a hen's egg was in the left ventricle. There were also lesions of pleurisy with hepatization of parts of the lungs and some small abscesses.—(*Veterin. Journal.*)

INTUSSUSCEPTION OF THE DUODENUM [*G. T. Pickering, F. R. C. V. S.*].—Cases of intussusception are of common occurrence in veterinary practice, but some possess more interest than others, either by their manifestations or probably more by the lesions that are found at the post-mortem. The following belongs to this class, as the author has failed to find a similar one on record. A horse was taken with colics, which lasted some 24 hours, and of such a nature that he was shot as incurable. His symptoms were "great pain, laying on sternum, anxious expression, partial sweats; at times threw himself on near side, looking back towards the right flank, then would get up and wander round the box and lie down with forelegs partly extended, nose and mouth pressed to the ground; about every 10 minutes passed a quantity of brown fluid from both nostrils. Pulse thready, hardly perceptible. Temperature 102, mucous membranes injected. Skin cold and clammy. No peristaltic action of the bowels. No pain on pressure over the abdomen." In the presence of such manifestations, the author not believing in recovery, advised shooting. Post-mortem: Cardial cavities full of dark clotted blood. Lungs slightly congested; liver, spleen, kidneys, healthy. Stomach distended and full of brown colored fluid, and two feet from the pyloric orifice of the stomach, the duodenum was intussuscepted back to the pyloric orifice, entirely blocking the outlet from the stomach, carrying with it a portion of the mesentery. On cutting into this part it looked like a mass of dark colored blood, due to rupture of the blood vessels.—(*Veter. Record.*)

ILIO-CÆCAL INVAGINATION IN A THOROUGHBRED COLT [*W. M. Scott, F. R. C. V. S.*].—Are drastic purgatives (such as aloes, calomel, physostigmine), administered in intestinal disorders, apt to produce invagination, twist, displacement, etc.? is the question asked by the author, after relating the following case. When only nine days old a colt was attacked with mucointeritis, with dysenteric complications. He recovered from it,

and remained healthy up to the age of six months, when one morning he was found in his paddock showing all the symptoms of ordinary colic. He had, however, a peculiar manifestation, which remained most pronounced throughout the whole sickness, viz.: at short intervals he would lie on his back from five to fifteen minutes at a time in a position similar to an animal with strangulated hernia. While in this position he seemed completely at ease. During the day the condition grew slowly worse and death occurred the next morning without a struggle. At the post-mortem there was found a small quantity of serum slightly tinged with blood, a circumscribed viscero-parietal peritonitis in the umbilical region. The mesenteric vessels were gorged with clotted blood. On undoing the invagination of the ilium through the cæcum, it was found that fifteen inches of intestines were involved, that the mucous membrane was intensely inflamed, with patches of ulceration, and that between the muscular and mucous coats there was considerable infiltration.—(*Vet. Record*).

ANOTHER CASE OF ILO-CÆCAL INVAGINATION [*W. Paner, M. R. C. V. S.*].—This is related with different manifestations than the preceding. Some usual symptoms of abdominal pains, which failed to be relieved by treatment. Suspecting complications and a fatal result, the animal was destroyed. There again an invagination of the ilium into the cæcum was found at post-mortem, two feet of the small bowel having entered the large, so that the mucous membrane was on the external surface. By opposition to the case of Mr. Scott (above presented), the horse, instead of lying on his back, repeatedly sat on his haunches, but did not adopt the first position. But little value, therefore, can be attached to the position assumed by the sufferer, as far as diagnosis of ilio-cæcal invagination is concerned.—(*Vet. Rec.*)

RABIES is being reported quite frequently to the Minnesota Board of Health from various sections of the State. State Veterinarian Brimhall is giving them his attention.

A LARGE DELEGATION from New York City attended the annual meeting of the Veterinary Medical Association of New Jersey at Trenton, on the 8th ult. It was composed of Drs. E. B. Ackerman, George H. Burns, Roscoe R. Bell, Robert Dickson, Robert W. Ellis, and James L. Robertson, and from Ithaca, Prof. V. A. Moore, while Pennsylvania was represented by Drs. Pearson and Hoskins.

CORRESPONDENCE.

HELP THIS COMMITTEE TO HELP THE PROFESSION.

BROOKLYN, N. Y., Jan. 4, 1903.

Editors American Veterinary Review:

DEAR SIRS:—The Committee on Intelligence and Education of the American Veterinary Medical Association is desirous of obtaining the following information, and thinks it might obtain the quickest results through your valuable magazine, and therefore addresses you, so that you might publish this in your next issue.

We want to know the name of each and every veterinary college in the United States and Canada, whether it is an independent school or connected with some university or agricultural college. Also, the name of the secretary or dean and the correct address of the school or its officers, so that this committee can compile a correct list of schools and get in direct communication with each and every one of them.

We would also like to find out the particular kind or class of literature the profession in the various sections of the country are desirous of having this committee bring before the public, the press, or before some public boards, departments, or societies—such as health, or agriculture departments; cattle or live-stock boards, etc., as exist in the several States.

We also want to obtain a correct list of all boards of examiners connected with the Board of Regents in each State, with the address of such board or its president and secretary so that this committee can communicate directly with them.

To get this information accurately it will be necessary that this committee hear from each State and Canada, and then the lists can be made accurate and complete and with proper addresses.

The committee respectfully calls this to the attention of the Resident State Secretaries, and asks them to coöperate with this committee and to make it their business to furnish this information accurately and as soon as possible, so that we may go ahead on the lines suggested and act according to the resolutions passed at the last meeting of our Association.

Trusting you will have space to insert this in the next issue of your valuable magazine, I remain,

Very truly yours,

E. B. ACKERMAN, *Chairman.*

DR. IDE'S CASE OF REGURGITATION OF GAS—A SIMILAR CASE.

COLUMBIANA, OHIO. Jan. 9, 1903

Editors American Veterinary Review :

DEAR SIRS:—I see by the January REVIEW, page 959, Dr. Ide, Lowville, N. Y., has a case that puzzles him, and wishes some light upon it. From the symptoms he gives it is a case of dilatation of the œsophagus, as I treated a case similar some three or four years ago, and I had a report of it written out, but did not send it for publication. It was that of a sorrel mare, six years old, by Seiminicolon, dam Belle W. This mare's name was Susan B. An attorney of this town brought her from his father's farm, about eight miles distant, to his barn across the alley from my stable. The following day he drove her about six miles. She was taken ill on the way home, but managed to get home. I diagnosed her trouble as a case of acute indigestion; gave chloral hydrate, and finally used the trocar to relieve the flatulence. Stayed with her all night, as she was uneasy by spells. I had used eserine and pilocarpine early in the case, but in a small dose. I also gave a pint of oil. The bowels did not move any until the following evening. Next day she ate some grass and bran mashes; four days later she had a second attack, but only a mild one. One hock began to swell, and the owner made me a present of her, provided I would give him the colt she was carrying, when old enough to wean. The trouble in the hock terminated in arthritis and synovitis. I placed her in slings, tried all remedies, had three fistulous openings. One particular symptom of dilatation of the œsophagus was that the mare would eat for about ten minutes and would then discontinue for some time, and you could see the bolus moving up and down in the cervical region. A short time after she had an evacuation of the bowels the up-and-down movement of the bolus in the gullet would disappear, and she would commence eating again, but the same trouble would return. I then made inquiry of her former owner. He stated that when driving her, there appeared to be a rattling or gurgling noise. I went to the house and secured Friedberger & Frölicher's "Pathology and Therapeutics," translated by Prof. Zuill, Vol. I, page 46, from which description I diagnosed it as dilatation of the œsophagus. I kept the mare for several days longer and made a careful study of her symptoms. I finally chloro-formed her and held a post-mortem, and my diagnosis was confirmed. The stomach did not have the *cul-de-sac* shape; it was

long ; the thoracic portion of the œsophagus was six inches in diameter ; all the folds were straightened out near the stomach ; it was filled like a stuffed gut or bowel half way of the cervical portion, which tapered to three inches in diameter. The stomach would have to empty before the mass could go down. The network over the stomach was torn, but in the anterior portion it was entirely gone. I suppose in former sick spells it had given away, and had become absorbed, as there was only about one-half the network I have noticed in horses that I have held post-mortems on where the stomach was ruptured. The only history of the case I could get was that Mr. Silvers (the Chester White pig man of Cleveland) had raised her, and she had, from the descriptions of symptoms, an attack of nettle-rash before the attorney's father purchased her.

As to treatment, I do not know of any unless it would be molasses, or predigested food of some kind, as the food lying or remaining in the œsophagus for some time will ferment. I would suggest molasses and middlings. Have used it on calves with good results in digestive trouble. Am also giving my driving mare molasses and bran morning and evening. If the patient dies, hold post-mortem, and let us all know the lesion found.

J. B. CAUGHEY, D. V. S.

"A RECENT POLL of one of the most prosperous Western States developed the amazing fact that there were nearly 100 graduated veterinarians in that State who are not subscribers to any American or foreign veterinary journal. Any comment is unnecessary."—(*President Lowe's address to the New Jersey State V. M. Association.*)

BILL NYE once said that John Bright, having discovered the need of "a good, reliable disease for the use of the aristocratic and American statesmen," began to "sit up nights and perfect Bright's disease." He says of it: "It has been kept out of reach of the poor, and to die of this disease has been regarded as a proud distinction."—(*Iowa Medical Journal.*)

AT the January meeting of the New York County V. M. Association there was a demonstration of the use of the X-ray apparatus upon various subjects. While examining a small metallic substance in the stomach of a dog, a veterinary wag asked what could be observed by turning the rays on to the lungs. He was informed that there would be nothing observed but the ribs, to which he replied that he thought we might see the "seat of his pants."

BIBLIOGRAPHY.

A TEXTBOOK OF HISTOLOGY AND MICROSCOPIC ANATOMY OF THE HUMAN BODY, INCLUDING MICROSCOPIC TECHNIQUE. By Dr. Ladislaus Szymonowicz, A. Ö., Professor of Histology and Embryology in the University of Lemberg. Translated and Edited by John Bruce MacCallum, M. D., Johns Hopkins University, Baltimore. Illustrated with 277 Engravings, including 57 Plates in Color and Monochrome. Lea Bros. & Co., Philadelphia and New York. 1902. Pp. 435. Cloth. \$3. net.

A good knowledge of histology is absolutely essential to an adequate conception of such medical subjects as physiology, pathology, therapeutics and the processes of repair of tissues. Fortunately there is no branch of medical science which affords a more fascinating study than histology. This is especially so now that Szymonowicz-MacCallum has appeared in the book market. This work is printed in large type upon excellent paper, and is attractively and durably bound. The illustrations are noteworthy on account of their abundance and the excellence of their execution. Whenever one feels the need of a figure or plate to explain the text, it is always to be found. Of the plates, some are in color and some in monochrome. These are so inviting as to compel attention to them. They markedly facilitate the study of the subject. Writing as I am for veterinary students and practitioners, it may be well to state that, although the title of the book sets forth that it is a "Histology of the Human Body," out of a total of 180 figures and 42 plates, exclusive of those which are diagrammatic, there are 119 figures and 22 plates made from 19 different species of lower animals as against 61 figures and 20 plates made from the human body. The veterinarian, therefore, may study this book with the assurance that it is in reality a safe and helpful guide to him in the study of animal histology. The price is very low considering the character of the book.

Part I of the book treats of the *cell* and the various *tissues* which enter into the structure of the animal body. Part II treats of the *microscopic anatomy* of the various organs. The appendix discusses in a singularly concise and helpful way the subject of *general microscopic technique*. The language of the book is remarkably intelligible and readable, with complete absence of unnecessarily technical language. Due credit is given to American authors for their work, something unusual in a foreign book. MacCallum has made numerous additions both in the text and in the illustrations. It is important to note that

he has admirably succeeded in embodying the very latest researches upon the subjects with which the book deals. I can heartily and unreservedly recommend this book to students and practitioners of veterinary medicine.

JOHN J. REPP, V. M. D.

OBITUARY.

JUNIUS H. WATTLES, SR., of Kansas City, Mo., died at his home in that city, on Nov. 9, from the effects of ptomaine poisoning, both he and his wife having become ill after eating calves' brains. This occurred the latter part of September, and, while Mrs. Wattles completely recovered, the doctor never regained his health. He was born in Wisconsin in 1855 and graduated from the Chicago Veterinary College in 1887, and in 1891 established the Kansas City Veterinary College. In 1897, having severed his connection with this institution he founded the Western Veterinary College, in that city, of which he was dean until his death. A widow and a son, Dr. Junius H. Wattles, Jr., survive him.

JOHN AIRTH, M. R. C. V. S., of Sioux City, Iowa, died in the early part of November from asphyxia, due to his having inadvertently turned on the gas in a stove which he used for heating purposes. He had been in active practice in Sioux City for the past seven years.

ANTIDOTE FOR FORMALDEHYDE.—In view of the fact that this chemical is coming more and more into general use as a disinfectant and antiseptic, cases of poisoning from it will become more frequent. We have an easily accessible and reliable antidote in ammonia water (a few drops well diluted) or the aromatic spirit of ammonium.—(*Merck's Arch.*)

"**MALARIAL FEVER IN HORSES,**" so ably described at the last meeting of the A. V. M. A., by Dr. Fred. Torrance, which has been so fatal to horses in Manitoba, and which has been under investigation for a number of years, has, says the Minneapolis (Minn.) *Tribune*, recently been the subject of further study by Drs. Bell and Torrance, in conjunction with Drs. Westbrook and Brimhall, of the Minnesota State Board of Health, and that all have practically agreed that it is microbian in nature.

SOCIETY MEETINGS.

VETERINARY MEDICAL ASSOCIATION OF NEW JERSEY.

The annual meeting was called to order on the morning of January 8th, 1903, in the parlors of the Trenton House, Trenton, N. J. The President, Dr. Wm. Herbert Lowe, occupied the chair. Records of the semi-annual meeting held at Newark, July 10th, 1902, were read and approved.

Applications for membership were on file as follows: Drs. Vernon B. Height, of Asbury Park; H. R. Clark, of Long Branch; J. H. Conover, of Flemington, and J. B. Jones, of Atlantic City. All applicants were duly vouched for and approved by the Executive Committee, and were by unanimous vote admitted to membership.

A bill to change Article III of the Constitution came before the members for final action. This bill, which came before the last semi-annual meeting for first reading, had bearing upon eligibility for membership. The change proposed was essential, owing to the existence of the new law enacted at the last session of the Legislature, and provided that candidates for membership entering the profession on or after the first Monday in May, 1902, must be licensed by the State Board of Veterinary Medical Examiners and be registered in conformity with the provisions of Chapter 18, Laws of 1902. By vote of the Association the change in the Constitution was adopted.

A report from the Legislation Committee revealed the fact that there were some violations of the newly enacted law regulating the practice of veterinary medicine, surgery, etc. Dr. A. T. Sellers, of Camden, reported a case of illegal practice. Dr. Vernon B. Height, of Asbury Park, reported that with Dr. H. R. Clark, of Long Branch, he had been instrumental in the arrest of an illegal practitioner in his section of the State. The case was to have come before the Grand Jury on the day of the meeting, January 8th, and the fact that the defendant had communicated with his accusers, seeking for clemency, would indicate his acknowledgment of guilt and fear of retribution. The report of Legislation Committee brought forth some discussion as to the proper method of dealing with violators of the law. Drs. T. E. Smith and T. B. Rogers, of the State Board of Examiners, spoke for the Board and requested that cases of violation of the law be reported to them whenever

the evidence was of such a character as to warrant prosecution.

The special committee appointed to investigate delinquents, reported that letters had been sent to or personal calls had been made upon such members and that in some cases no reply had been received from courteous communications; that in some other cases where a personal visit was made, members of the committee had been treated in a discourteous and insulting manner. It was recommended that eleven names be dropped from the Association membership. The vote of the Association to act in accordance with the recommendation of the committee was a unanimous one.

The following delegates reported:

Dr. T. Earle Budd for the delegation to the Atlantic City Horse Show.

Drs. Smith and Glennon, delegates to the recent meeting of the American Veterinary Medical Association at Minneapolis.

Dr. L. P. Hurley, delegate to the Pennsylvania Veterinary Medical Association, and Dr. S. S. Treadwell to the New York State Association.

At this time under the regular order of business occurred the election of officers for the ensuing two years. The following were unanimously chosen by ballot:

President—Dr. Wm. Herbert Lowe, Paterson.

First Vice-President—Dr. T. B. Rogers, Woodbury.

Second Vice-President—Dr. H. Vander Roest, Newark.

Secretary—Dr. George W. Pope, Athenia.

Treasurer—Dr. James M. Mecray, Maple Shade.

It was voted that \$50 per annum be devoted to the Secretary's use for employing a stenographer and typewriter.

Following the election of officers, the President made his annual address. As this address is published elsewhere in this number of the REVIEW, but passing mention will be made of the chief suggestions, which were: (1)—The appointment of a conference committee to confer with State officials, visit State agriculture and experiment stations, etc.; (2)—The establishment of a State Veterinary Library; (3)—A two days' session of the Association; (4)—The establishment of a bureau with a State Veterinarian in charge. Said bureau to be to the State what the Bureau of Animal Industry is to the country at large.

Following the President's address the following visitors were introduced: Dr. E. B. Voorhees, President of the State Board of Agriculture; Hon. Franklin Dye, Secretary of the State Board of Agriculture; Hon. S. B. Kitcham, of the State

Tuberculosis Commission; Dr. Veranus A. Moore, of Ithaca, N. Y.; Drs. Bell, Berns and Ackerman of Brooklyn; Drs. Robertson, Ellis and Dickon, of New York; Drs. Pearson and Hoskins, of Philadelphia.

Dr. Voorhees highly commended the suggestions embodied in the President's address and explained the need of some one division of the State Government to which animal industry matters could be referred; at the present time there existed the State Board of Agriculture, the Tuberculosis Commission and the Dairy Commission, to which bodies communications and requests are frequently sent indiscriminately, thus necessitating delay and question as to the extent of authority of these several divisions of the public service.

Hon. Franklin Dye, Secretary of the State Board of Agriculture, also addressed the meeting and invited the Association to apply for membership in the State Board of Agriculture. It was voted to make such application and if received empower the President to appoint the two delegates allowable to the Association as members.

At 1 P. M. the meeting adjourned for dinner, reconvening at 2.30.

Under "New Business," Dr. Vander Roest stated that the Essex Co. Board of Health would without doubt in the near future appoint a meat inspector, and it was voted that the Secretary be authorized to communicate with the Board and respectfully request that in case such an appointment was made the office be filled by a qualified veterinarian.

It was also voted that a Conference Committee be appointed with power to carry out the suggestions incorporated in Dr. Lowe's address. The literary feature of the meeting was a paper presented by Dr. Veranus A. Moore, of Cornell University. The paper was entitled "Etiology and Prevention of Infectious Diseases of Animals."* Following the reading of the paper Dr. Moore, with the aid of lantern slides, gave a fine demonstration of various forms of bacteria. It would not be possible to reproduce Dr. Moore's extemporaneous remarks while the stereopticon was in operation, but suffice it to say that he held the attention of his hearers from first to last.

Dr. T. B. Rogers, of the State Board of Examiners, read a paper entitled "The Relation of the State Boards of Examiners to the Teaching Schools, the Profession and the State." Dr. Rogers' paper elicited a discussion, in which Drs. Robertson,

* Published elsewhere in this number of the REVIEW.

Hoskins, Berns, Pearson, Ackerman, Bell and others participated.

Dr. Pearson made a brief report of his experiments in immunizing animals against tuberculosis.

It was voted to hold the semi-annual meeting in July, 1903, with the Secretary at Athenia.

President Lowe announced that he would appoint committees and delegates in the near future.

GEORGE W. POPE, *Secretary.*

SCHUYLKILL VALLEY VETERINARY ASSOCIATION.

The semi-annual meeting of this Association was held on Wednesday, December 17, 1902, at the Board of Trade Room, Reading, Pa., with Dr. Otto G. Noack, President, in the chair, and Dr. W. G. Huyett acting as Secretary. On roll-call the following members responded to their names: Drs. D. R. Kohler, Boyertown; G. A. Wehr, Denver; Otto G. Noack, Reading; F. H. McCarthy, Pottsville; W. G. Huyett, Wernersville; F. H. Schneider, Philadelphia; S. G. Burkholder, Rothville; I. C. Newhard, Ashland; E. D. Longacre, Shenandoah; and W. S. Longacre, Mantz. Among the visitors were Drs. Leonard Pearson, University of Pennsylvania; E. M. Ranck, Glenolden; Jacob B. Leber, Ephrata; and Jacob N. Becker, Palmyra.

The minutes of the previous meeting were read and approved. The Treasurer, Dr. F. H. McCarthy handed in a satisfactory report, leaving us about \$35 in the treasury, after all bills had been paid. The President delivered his address, which was concise as usual, but very comprehensive. After dwelling upon the work this Association has accomplished, he referred to the duties of the veterinarian in relation to the agricultural interests, specially in connection with the spread of infectious diseases communicable to man. He furthermore expressed a strong desire for a higher standard of the profession, claiming that a great advance to that effect would be gained by having all veterinary colleges under State supervision, instead of being private institutions.

The Association received their charter, which was read by the Secretary. A motion was made and seconded that same be accepted as satisfactory, thus now rendering it an incorporated body. A few favorable remarks were given by Drs. Wehr and Kohler, delegates to the State Convention.

The Society then adjourned for luncheon, convening again at 1.30 P. M.

The President offered the following resolutions:

WHEREAS, By the change of Governor the question of appointment of State Veterinarian arises ; and

WHEREAS, The present incumbent, Dr. Leonard Pearson, has shown himself able and fully competent in the execution of the duties required by this office ; be it

Resolved, That this Association recommends and urges his reappointment for this office to Governor-elect Pennypacker.

WHEREAS, A bill, known as the Anti-Vivisection bill is introduced in the United States Senate to prohibit and make unlawful experiments on living animals ; and

WHEREAS, The passage of such act would seriously interfere with the study of medical students ; therefore be it

Resolved, That this Association protests against the passage of said act and shall urge the Senators of this State to try to defeat this bill.

WHEREAS, This meeting of the Schuylkill Valley Veterinary Association has been one of the most successful that has ever been held by this organization ; and

WHEREAS, This was only possible through the courtesy and kindness of Drs. Pearson, Ranck, and Burkholder to attend and favor us with their instructive essays ; be it

Resolved, That the thanks of this Association are hereby extended to them for their aid to make this our meeting a success, and we thereby express our deep appreciation of the same.

These resolutions were approved as read, and ordered to be spread upon the minutes.

A recess was then given for the collection of dues. After adjournment the chairman of the Committee of Intelligence and Education was called upon, and Dr. W. S. Longacre afforded a few appropriate remarks.

Dr. D. R. Kohler, Boyertown, read a paper on the subject of "Parturient Paralysis;"* the paper was very practical, affording some instructive points, and was thoroughly discussed by most of the members and visitors present. A motion was made and carried tendering a vote of thanks to Dr. Kohler for his valuable paper.

Owing to Dr. Wehr not being prepared with his paper on "Pleuro-Pneumonia" he favored the audience by a general talk upon the subject. It being very familiar, and a disease common to every practitioner, much comment was offered upon the treatment.

Dr. Pearson narrated the latest treatment at the University of Pennsylvania. He considers it desirable to tap off the serum as soon as significant symptoms are in evidence, as he states the operation is too often performed with results fatal, in which case

* Published elsewhere in this number.

success prevails if performed earlier. The doctor prefers strophanthus to digitalis for weakness of the heart's action, owing to the latter drug producing an intermittent pulse after using for three days. The subject was also discussed by Drs. Wehr, Longacre (E. D.), Kohler, Huyett, Noack, and Newhard.

Dr. E. M. Ranck favored the Association by an ably prepared paper on "Sera in the Blood," after which he was called upon by the President to give a general talk upon the preparation of antitoxins, he being an authority along that line of no mean repute. He says, in the production of antitoxins, the selection of the horse is a matter of extreme importance; this work being under the immediate personal control of skilled veterinarians, who fix an absolute and invariable standard as to the character of the animal employed; each horse has to withstand a rigid physical examination, after which he is respectively injected with tuberculin and mallein. After this inspection, the selected horses are placed and kept in a specially constructed stable that is a model of sanitary perfection. A very small proportion of horses meeting the rigid requirements of physical soundness and health will yield antitoxin of sufficient unit strength, and hence those are discarded. The toxins are elaborated from the specific germ of the disease, then cultivated in some suitable culture media. After the expiration of the period of time required to obtain the greatest strength, the bacteria (germs) are killed by the addition of trikresol to the cultures, which are then repeatedly filtered in order to remove the destroyed germs. The definite unit strength of these toxins is determined by a series of injections into guinea-pigs, and thus ascertaining the minimum quantity of toxin which proves fatal to a guinea-pig, within a certain fixed period of time. This quantity of toxin (unit strength) is now injected into the horse under aseptic conditions. These injections (small at first) are repeated at regular intervals in order to obtain the degree of tolerance of immunity. A horse gradually acquires to the influence of the toxins upon the system, and the blood develops the property of neutralizing these toxins. The injections of toxins are repeated in gradually increasing doses once every week until the horse receives and tolerates without untoward symptoms, a quantity of toxins equal to one thousand times the amount of the first injection, this process consuming, on the average, about four to six months.

The horse is now bled into a previously sterilized parchment covered jar, is then allowed to stand for a few days, when the

serum collects on top and the clot or solid constituents to bottom of jar. The serum is now removed by a suction pump and transferred to sterile jars. Contamination of the serum, he says, is absolutely impossible, as at no stage of the process of anti-toxin preparation is it in contact with the outside air.

The antiseptic trikresol is now added as a preservative, after which the strength of same is determined by experimenting upon guinea-pigs.

Discussions were participated in by Drs. Schneider, Wehr and Newhard.

A vote of thanks was extended Dr. Ranck for his instructive remarks. Dr. E. M. Ranck is employed by the H. K. Mulford Company at their Vaccine Laboratory, Glenolden, Delaware Co., Penna.

Dr. Leonard Pearson entertained the audience for some time with a paper entitled, "The Veterinary Teacher and Practitioner," after which he described his trip to the New England States, in order to investigate the outbreak of foot-and-mouth disease. He gave an excellent general report, which was highly appreciated. He also referred to the experiments upon the immunization of cattle against tuberculosis, conducted at present by Dr. S. H. Gilliland and himself. Similar experiments have been conducted by McFadyean in June, 1901, and March, 1902, also by von Behring, December, 1901, but the observation thus attained from their reports certify that their experiments are yet incomplete. He (Pearson) says that tuberculosis of cattle has been the subject of special and extensive study and experimentation in the laboratory and research station of the Pennsylvania State Live-Stock Sanitary Board since 1896. During this time the virulence of cattle and other animals to tubercle culture and material from many sources have been tested by Dr. M. P. Ravenel, Dr. John J. Repp, Dr. Gilliland and himself. Much enthusiasm was expressed by the audience upon the remarks of Dr. Pearson, as most of the members were unaware of such a project, and all present were heartily in sympathy with such a stride of advancement in our profession. We all sincerely hope the experiments under way may prove successful, thus restraining the most insidious contagious disease upon the earth.

Dr. S. G. Burkholder's essay, on the "Relation of the Veterinarian to the Medical Profession," was replete with interesting and besides instructive thoughts. It will be published in an early issue of the REVIEW.

A vote of thanks was extended Drs. Pearson and Burkholder, and resolutions framed to that effect.

Motion was made and seconded to adjourn at 4.30 P. M.

W. G. HUYETT, *Cor. Sec.*

ONTARIO VETERINARY ASSOCIATION.

The annual meeting was held in the Veterinary College, Toronto, on Dec. 24, 1902, the President, Dr. J. H. Tennent, in the chair. He opened the meeting by an excellent address, in which the object in view was evidently the mutual improvement of members in all branches of veterinary science, both practically and theoretically, and the advancement of the position and interests of the veterinary profession in the Province of Ontario. Several of the points brought up elicited considerable but amicable discussion, in which many members participated.

The minutes of the previous meeting were read and adopted.

The Secretary-Treasurer and Registrar's report was then presented. It showed a large amount of correspondence, considerable printing, and a new copy of the Register issued containing a full list of those registered in accordance with the Act of Incorporation of the Ontario Veterinary Association, complete up to July 31st, 1902, containing also the Act of Incorporation. 55 graduates have registered since the last annual meeting. The finances were in a good condition, there being \$22 more cash in the hands of the Treasurer than at the opening of the meeting last year.

The following new members were duly proposed and elected : R. H. Cook, V. S., of Malton ; J. M. Young, V. S., of Oil Springs ; J. D. McLeod, V. S., of Harrison ; and A. E. James, V. S., of Ottawa.

The business routine being concluded, at the invitation of Prof. A. Smith the members adjourned for lunch.

The meeting opened again immediately after lunch. Dr. J. D. O'Neil read an excellent and practical paper on "Soundness and Unsoundness in Horses," and the duties and liabilities of the veterinary practitioner in successfully acquitting himself in the performance of this necessary and important duty.

Dr. S. E. Boulter contributed an article on a case of tetanus in the horse—evidently a very severe case.

Dr. R. Barnes also contributed a paper on tetanus. This was a severe case. The medicinal treatment consisted principally of frequent hypodermic injections of solutions of carbolic

acid and glycerine in water. Complete recovery resulted after about 40 days.

The reading of these papers elicited considerable discussion, in which a number of members participated. The discussions were interesting and instructive.

The President suggested that some of the members should volunteer to attend the next annual meeting and perform some of the interesting surgical operations before the members for mutual benefit.

In response Dr. George would operate and Dr. Breuton, of Detroit, was spoken of to perform an operation for roaring.

Dr. Stevens exhibited a very ingenious instrument of his own invention for grasping the foetus, in cases of difficult parturition.

Dr. Rutherford, of Ottawa, Chief Veterinary Surgeon of the Dominion of Canada, gave an eloquent and stirring address. He said he had resided and practiced in the Province of Manitoba for several years. He said that no man can legally practice veterinary science in that Province unless he is a member of the Manitoba Medical Association, and he trusted that the members of the Ontario Veterinary Association, by standing shoulder to shoulder, would eventually obtain the same result in Ontario. He gave a most interesting account of the meeting of the American Veterinary Medical Association recently held in Minneapolis, of which he had been elected Vice-President. He had attended that meeting. He said that the clinical work performed there had been done by the most skilful practitioners in America. He had succeeded in inducing that Association to hold its next meeting in the City of Ottawa, Canada, and he strongly urged the members of the Ontario Veterinary Association to attend that meeting, which will be held in September next.

The President and Dr. D. K. Smith were appointed to represent this Association at the American Veterinary Medical Association meeting in Ottawa, also to aid Dr. Rutherford in entertaining its members there, and the sum of \$100 was appropriated to be forwarded to Dr. Rutherford to pay a share of the expenses of the American Veterinary Medical Association in Ottawa.

Amongst the most important communications read was one from the President of the Industrial Exhibition Association of Toronto, requesting the cordial approval and active support of the Ontario Veterinary Association in holding a Dominion Exhibition in Toronto in 1903. A resolution to that effect was passed at once without a dissentient voice.

There having been some discussions on breaches of professional ethics, the Committee on the Revision of the By-Laws requested permission to defer their report until the next meeting.

The election of officers then took place, with the result that all the officers of the Association were re-elected for another term of office.

The sum of \$25 was voted for a medal to be presented for competition to the graduating class of the Ontario Veterinary College at the next Spring examinations.

And the meeting adjourned.

C. H. SWEETAPPLE, *Secretary.*

VETERINARY MEDICAL ASSOCIATION OF NEW YORK COUNTY.

The regular monthly meeting was held on Wednesday, January 7th, at 8 P. M., with Vice-President J. E. Ryder in the chair. Members present:—Drs. Ryder, Bell, Robertson, McCully, Grenside, Bowers, Keller, Mangin, Dickson, Ackerman, Sherwood, O'Shea, Burns, Ellis. Visitors:—Drs. Critcherson, Strange, Stimpson, Morris, Hayes, Wells and W. C. Miller, also students of N. Y.-A. V. C.

The minutes of the last meeting were read and approved. The *Comitia Minora* had nothing to report.

Dr. Roscoe R. Bell then reported some cases of poisoning of horses by arsenic among the Polish Jews, where he had been called in consultation and presented sections of the stomach and intestines showing marked inflammatory processes from the action of the drug. He recommends sesquioxide of iron in large solution in suspected cases, but thought that in those cases which presented symptoms unmistakably of poisoning, there was very little hope from medical treatment.

Cocaine and morphine, either separately or in combination, as a curative and diagnostic, was brought forward for discussion by Dr. Clayton, and was well discussed. Drs. Robertson and Strange, both reporting one instance each where it had acted as a curative in a case of lameness of a year's standing. Discussion entered into by Drs. Ryder, Critcherson and Bowers.

Dr. Ryder presented a chmpignon which he had lately removed from a horse, it being very large. Dr. W. C. Miller has kindly consented to have sections of it made and also the botryomycetes stained and on view at the next meeting for the benefit of the members.

Dr. Bell asked those present if they had ever heard of a *pure* white colt being foaled, as he had been asked that question by a layman. Dr. McCully stated that he had heard of one.

Dr. Critcherson reported another case of luxation of the patella, which had been well discussed at the last meeting. He also stated that after the usual methods of replacing had been tried without results, he put a side-line around the lower part of affected leg and had traction made toward the opposite side and in a backward rotating or circular movement, when replacement immediately took place.

Dr. Ellis stated that he would have a detailed report of a case of rabies in a dog which bit a horse, both animals dying from the disease; also the report of the inoculations made from both animals.

Dr. W. C. Miller, after explaining the philosophy of the X-ray and its practical uses, exhibited several specimens of broken bones in animals and some in the members present, the union of the broken bones being shown most distinctly. He also exhibited a dog having a small metallic substance in his stomach, which could be plainly seen by the aid of the rays. This proved of great interest as well as instructive to all present.

Adjourned.

C. E. CLAYTON, *Secretary.*

PASSAIC COUNTY VETERINARY MEDICAL ASSOCIATION.

The regular monthly meeting was held at 169 Paterson Street, Paterson, N. J., on Tuesday evening, January 6, 1903, with Dr. William Herbert Lowe, President, in the chair, and Dr. T. J. Cooper acting as Secretary. On roll-call the following members answered to their names:—Drs. William J. Fredericks, Delawanna; T. J. Cooper, Paterson; John H. Degrav, Paterson; J. Payne Lowe, Passaic; W. H. Lowe, Jr., Paterson, and William Herbert Lowe, Paterson.

The minutes of Dec. 2d were read and approved.

Dr. Cooper brought up the matter of arranging to provide a substitute in the event of a practitioner being sick or called out of town.

Dr. Cooper thought one of the best ways of promoting the mutual interests of members was by each practitioner reporting from time to time such cases in his practice as were not responding satisfactorily to treatment.

Dr. J. Payne Lowe was in favor of the Association paying

the expense of practitioners in sending specimens to the State Laboratory at Trenton for bacteriological examination in cases where the Association received the benefit of such examination. He cited cases of duiib rabies in the dog, diphtheria in the cat, and so on, where the practitioner from a clinical standpoint readily made out a diagnosis, but where in many instances it would be advisable to have the diagnosis confirmed by bacteriological examination or inoculation experiments.

The several matters brought up under "New Business" were laid over.

A letter was read from Dr. William C. Berry to the effect that he was quarantined at his home in the upper part of the county on account of the existence of scarlet fever in his family, and consequently could not attend. On motion of Dr. W. H. Lowe, Jr., the Secretary was instructed to write a suitable letter to Dr. Berry, conveying to him the sympathy of his fellow-members.

Dr. Fredericks read a paper giving his experience with "Iodide of Potassium and Eserine in the Treatment of Parturient Paresis." Three cases that he had treated with these drugs recovered. Dr. Fredericks injects 3 grs. eserine subcutaneously. Dr. J. Payne Lowe remarked that there was one thing sure and that was that we did not kill any of our cases of parturient paresis now by drenching since we had adopted the modern method of treatment.

Dr. Cooper told of a peculiar case of lameness in a mare in foal and promised to produce the mare in evidence at the next meeting.

The President appointed Dr. W. H. Lowe, Jr., essayist for the next meeting. On motion meeting adjourned at 10 P. M.

T. J. COOPER, *Secretary pro tem.*

THE ILLINOIS STATE VETERINARY MEDICAL ASSOCIATION

will hold its twenty-first semi-annual meeting in Morrow Hall, Agricultural Building, Champaign, Ill., Tuesday, February 17th, 1903. Among the topics for discussion are the following: "Intestinal Catarrh of the Ox," Dr. F. H. Barr, Pana; "Azoturia and its Treatment," Dr. F. H. Ames, Canton; "Veterinary Obstetrics," Dr. W. J. Martin, Kankakee; "Fraternism in Veterinary Science," Dr. T. W. Corkery, Urbana; (Subject not yet announced), Dr. C. C. Mills, Decatur; Reports of Cases, Dr. S. S. Baker, Chicago; "Tetanus and its Treatment," Prof. D. McIntosh, Champaign. All will be cordially welcome.

W. H. WELCH, *Secretary.*

NEWS AND ITEMS.

DR. OTTO GEBHARD, (O. V. C., '94), was elected Sheriff of Cheboygan County, Mich., last fall.

DR. V. P. SMITH, of Washington, C. H., Ohio, is advocating and selling a sure-cure for hog cholera, which he advertises in circus-like fashion.

DR. C. C. STEVENS, who with his father, Dr. J. B. Stevens, composed the firm of Stevens & Son, of Yale, Mich., has withdrawn from the firm and is now conducting a practice in Byron, Mich.

ANOTHER ELEPHANT PUT TO DEATH.—Following closely upon the destruction of "Dangerous Tom," at the Bronx Zoölogical Park, another man-killing elephant has received a like treatment, though by a swifter method. "Tom" was poisoned by the cyanide of potassium, about 600 grains requiring nearly an hour to stop the heart. It was "Tops," the elephant which has been exhibited at Coney Island, New York, for some time, and who has during her career killed three men, and seemed ready to add to the list at any time. She was the original baby elephant, and was about 28 years old. She was brought to this country when eight years old, weighed when killed about six tons, and was valued at \$6000. It was the original intention of those in charge to strangle her with a strong noose made of rope, but she refused to walk into it. About 450 grains of cyanide of potassium, concealed in carrots, were administered, but no effects were observed from the deadly poison. Wires were strung from the Edison electric plant, two blocks away. Heavy iron plates were then cut and shaped like the bottom of the elephant's feet, and these were fastened to small pieces of board. The board and iron plate were then fastened to the feet, shoe fashion, one of them on the right fore foot and the other one on the left hind foot. The wires were then attached to the plates, workmen chained her to stout pins that had been driven into the ground and a heavy rope was fastened around her neck. She was eating apples, when the announcement was made that all was in readiness for turning on electricity, when six thousand volts were thrown on, and smoke and blue flame emerged from the two feet to which were fastened the plates and wires. The chains and ropes snapped like threads as the big beast began to swerve, and she fell over on her right side. Dr. H. J. Brothridge, of Brooklyn, pronounced her dead in twenty-two seconds after the electricity was turned on.

PUBLISHERS' DEPARTMENT.

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Rejected manuscripts will not be returned unless postage is forwarded.

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Alex. Eger, 34 East Van Buren St., Chicago, Ill., Veterinary Publisher and dealer in Veterinary Instruments, Books, and Drugs, is the authorized agent for the REVIEW in Chicago and the Middle West, and will receive subscriptions and advertisements at publishers' rates.

DURING the winter months, when coughs are so apt to assume a chronic form, nothing is so gratifying to the practitioner, as Glyco-Heroin (Smith), which has proven itself infallible in conditions of this kind. For full information turn to page 2 (ad. dept.).

"BALLING UP" is positively prevented, if during the snow season, horses are shod with the "Air-Cushion Rubber Horse Shoe Pad," manufactured by the Revere Rubber Co., whose ad. appears on page 4 (ad. dept.), and they prevent slipping.

FARBENFABRIKEN, of Elbersfeld Co., whose ad. appears at the foot of page 4 (ad. dept.) have a most interesting list of drug preparations, which they furnish veterinary practitioners, and in the results of their application to veterinary practice, they are very much interested.

Atkins and Durbrow's digestive regulator, advertised at the top of page 8 (ad. dept.), continues to grow in favor with the veterinary profession. There are many reasons why this is so. First, it is NOT A SECRET PREPARATION; the formula is furnished to veterinarians on application. Second, it is a purely vegetable and excellent preparation, and it is offered to the horse owners through their veterinary advisors.

The Abbott Alkaloidal Co., whose full-page ad. appears on the inside of the back cover page, which position it has occupied for more than three years, are still the leaders in these preparations. This house has for many years held the exalted position with the medical profession which it enjoys to-day, but it is especially interesting to veterinarians to recall that they are the pioneers as regards ALKALOMETRY IN VETERINARY PRACTICE.

REVIEWS WANTED.

The Publishers will pay 25 cents a piece for any of the following: January and April, 1901; January and February, 1902; December, 1899; September, 1898; and March, 1896; and 50 cents a piece for September and October, 1900. Address: ROBERT W. ELLIS, D. V. S., Business Manager, 500 W. 152d Street, New York.

AMERICAN VETERINARY REVIEW.

MARCH, 1903.

All communications for publication or in reference thereto should be addressed to Prof. Roscoe R. Bell, Seventh Ave. & Union St., Borough of Brooklyn, New York City.

EDITORIAL.

EUROPEAN CHRONICLES.

PARIS, Jan. 15, 1903.

DISTEMPER VACCINATION AGAIN.—If the subject of vaccination for distemper seems to be at rest for the present in its birthplace, France, the same cannot be said of England, if we are to understand well the articles that we find in the *Veterinary Record*. Two veterinarians have tried the vaccine of Dr. Phisalix (our readers have already read of the experiments that were carried on by the Société de Médecine Vétérinaire Pratique and of the unsuccessful results). There was much discussion about the manner in which the experiments had been carried out, others were proposed, and finally the subject was dropped because of a refusal on the part of Dr. Phisalix to submit himself to some special conditions required by the commission which had charge of the work.

In the meanwhile, the method had crossed the Channel, and our English brethren were willing to try. What would not lovers of dogs do to save them from that terrible disease? After a while one report came against the vaccine, and I think I made allusion to it in a previous chronicle. This, however, did not stay long victorious, as another soon followed; this was altogether different. The vaccine was good. The discussion warmed up; the *Veterinary Record* noticed it, recorded all the communications relating to it, and finally suggested the ap-

pointment of a small commission of veterinary surgeons to investigate the action of Dr. Phisalix's anti-distemper vaccine, and that a fund might be started to cover the expense of such an inquiry.

The two veterinarians who had tested the vaccine and disagreed on the results accepted the proposals, and both have already contributed 10 guineas for the same, with, however, one condition imposed by one of the gentlemen, viz., that "Dr. Phisalix consents to come over to England and superintend the experiments." Why should the doctor be present probably does not seem strictly necessary to all, as it is sure that there are in England plenty of men to carry out the experiments skilfully and honestly; but, after all, it may not be entirely useless to insist on the gentleman's presence; the commission of the Société de Médecine Vétérinaire Pratique did their work skilfully and honestly, and when a new series of experiments was proposed, the gentleman declined to comply and the thing remained unsettled.

I wonder if the result will be more satisfactory. The thing is worth doing anyhow, and of greater interest to English than to American practitioners, as the vaccine could be of easier importation to the first than to the second country. At any rate the question remains still open. You will hear more about it, if it comes to a point.

* * *

ARE WE GETTING TOO NUMEROUS?—Scientific societies here have a very good practice, which exists also in some American organizations, I believe, and which, by the way, I have seen strongly urged by Dr. Winchester, the late President of the A. V. M. Association, a practice which consists in the granting of prizes for special works presented to them. As I have already written, the Société Centrale of Paris is one which has followed this good habit regularly for years, and it is always an occasion for a great professional gathering; the hearing of the names of the successful candidates, the reading of some excellent biography of eminent members of the profession, or

other subjects ; and, again, the address of the President—all these make a good occasion for professional meetings, and when they take place, they are always crowded.

This year, the President, Mr. Butel, a school-mate of mine, delivered the address, and to all or at least the great majority, a passage of it was considered gloomy for veterinarians. Mr. Butel looked sadly upon the entrance of the automobiles, and said that the field of the veterinarians was reduced and likely to be deprived of one of its best resources and chances for work. You certainly will regret that such feelings should exist with veterinarians—at least with a few—and I dare say with very few. The opinion of the REVIEW is well known by our readers, and is far from agreeing with the ex-President of the French Society.

But, let us for a moment leave aside the prospective decadence of our profession, and let us consider, on the contrary, what takes place in the ranks of those future veterinarians who will have to live from this profession. The number of veterinarians is already very large ; in almost every part of the world a complaint of plethora comes out. In every part of Europe the cry is "too many." Even in little Belgium the alarm is given. At Cureghem School, says our colleague, Eraers, there are one hundred and forty-five veterinary students, and our Belgian friend exclaims : "Where are they going ? What will become of them when once graduated?" Is this all? No. Look at Italy. According to the *Bollettino della Pubblica Tetrizzazione*, the number of veterinary students during the year 1901-1902 was over 1200. In France the average number is always about the same (between 500 and 600) ; but how many in Germany, in England, everywhere in fact, and also in the United States, where new schools are so numerous, and in which, admitting a small average number, it cannot be difficult to go beyond the Italian figure of 1200.

If certainly President Butel fears the automobile, he can find a big army of good fellows who do not feel like him, and are ready to enter the field, even with the alarm cry, "We are too crowded ; we are too many ! "

FOOT-AND-MOUTH DISEASE.—Of course, says Eraers, and repeats Pion, we are too many. Veterinarians increase in number and the more they do, the more diseases diminish. Pleuro-pneumonia is gone! Glanders and farcy are being abolished or nearly so! Sanitary measures and hygiene will kill all that remain, even foot-and-mouth disease, of which we had a little outburst in the States. It is curious, but this outbreak seems to have left Europe indifferent. At one time a little notice relating to the embargo from Great Britain against live stock of America appeared in the *Record*; but that is all—French papers did not allude to it.

When, a few months ago, I was saying, “not likely to find its way to the United States, thanks to the good and strict measures that our friend, the Chief of the Bureau of Animal Industry, Dr. Salmon, has established, foot-and-mouth disease is still a subject which deserves always the attention of the sanitary veterinarian,” we felt that America was safe, and that she would remain free as she had been (with a single exception, I think). But what in March, 1902, made us say again, “Foot-and-mouth disease does not exist in the United States. Dr. Salmon and his body of co-workers are watching—but yet, who knows?”

Who knows? And foot-and-mouth disease is in the New England States. Thousands of animals are affected. Thousands of dollars are lost. Industry and commerce are threatened. . . . We were in error! It was not Dr. Salmon and his body of co-workers who were to guard our importing ports. Federal power and State power are two separate things. Fortunately, the Federal has the last say, and it will be the one which all sanitarians will endorse: “Stamp out the disease and guard against it as we have done with pleuro-pneumonia—and guard against it with men who are qualified—with veterinarians.”

After all, there is room yet for qualified men.

* * *

MILITARY VETERINARIANS.—How would poor Huidekoper

rejoice and use as an argument the following last news which I find in the official journal :

The law reorganizing the body of military veterinarians was voted on Dec. 6th. It means that the ranks of army veterinarians are fixed as follows :

- 1 Principal Veterinarian of 1st class, as colonel ;
- 14 Principal Veterinarians of 2d class, as lieutenant-colonels ;
- 42 Major Veterinarians, as majors ;
- 182 1st Veterinarians, as captains ;
- 226 2d Veterinarians or Assistants, as lieutenants and sub-lieutenants.

This is a great change in the position of the army veterinarians. It has been long in coming ; it has been hard to obtain. And, yet, while the practitioners in the army are receiving their proper due, the more modest practitioner, the one who is engaged in civil private work, is still waiting for the law that will give him the proper recognition and the standing he is entitled to. But politicians are in the way, and are bound to keep back the bill which will elevate him to the position that American veterinarians obtained long ago. It is true, however, that none but graduate veterinarians can fulfil an official position. On this point, perhaps, we might take a lesson.

* * *

LECTURING WITH THE AID OF THE CINEMATOGRAPH.—The use of projections as applied to public lectures is old by many years, but its application to anatomical descriptions is of comparatively recent origin. Professor Weisse, I believe, was the first to resort to them in his lectures at the Dental College in New York, and shortly afterward I introduced them in reviewing my course of anatomical demonstrations at the American Veterinary College. Since then Professor Coates has continued them, and I understand has lately added to their scope, by the exhibition of pathological lesions, etc.

It seems that in England the cinematograph has been called upon to exhibit typical cases of lameness and also pathological specimens of lungs from cattle affected with contagious pleuro-

pneumonia and corn-stalk disease. At a recent meeting of the Edinburgh Veterinary Medical Society, Professor Williams exhibited views of two typical cases of stringhalt, in which the actions were magnificently brought out. There was also shown a "shiverer," where one could see the most characteristic elevation and quivering of the tail. Some other illustrations were also thrown on the screen.

There is no doubt but that great progress has thus been made by this use of the cinematograph ; but certainly the application of projections for anatomy, descriptive and pathological, and perhaps also for physiology, is gaining such importance that no professor in those branches will dare to face a class of students without his magic lantern.

* * *

CHANGES IN VETERINARY JOURNALISM have taken place since the beginning of the year. As the REVIEW noticed it, the *Veterinary Journal* has modified its publication and the price of subscription ; and now it is the news of the death of that old stand-by *The Veterinarian*. The loss of this good contemporary will certainly be regretted by many of our *confrères*, who in the States were looking monthly for its appearance, and we personally remember the good hours we passed with such men as Norton, Simonds, Fleming and others who were then editors. As the *Veterinary Journal* says : "There were giants in those days, and they acted valiantly and suffered heroically." *The Journal of Comparative Pathology and Therapeutics*, with Prof. McFadyean, will uphold the name of the old veteran in giving it the privilege of a subtitle.

If we regret the death of *The Veterinarian*, we have also the pleasure to welcome the birth of another journal, the *Revue Générale de Médecine Vétérinaire*, edited by Prof. Leclainche, of Toulouse ; but, alas for many, it will be French, and, while it will review the veterinary news *all over the world*, how many will be deprived of the pleasure of reading it !

A. L.

THE REVIEW is again forced to ask the indulgence of its

friends on account of the many valuable articles which it is unable to publish as promptly as they deserve, and as the publishers would like. Although adding more than thirty pages to its regular issue almost monthly, and exceeding this in some instances, it is yet unable to meet the demands upon its pages. The closing volume has been by far the largest in the history of veterinary journalism in this country, comprising just 1200 pages. It will continue to fulfil its pledge of half a dozen years ago, that the more patronage the REVIEW receives, the better journal it will send forth. The REVIEW is what the profession makes it.

THE PRESENT NUMBER closes Volume XXVI of the AMERICAN VETERINARY REVIEW, the largest and best from all stand-points that has ever been issued. Most of the yearly subscriptions terminate with it, and we have little doubt but that all will renew for Volume XXVII, which will undoubtedly keep up the record of yearly improvements, as our arrangements are very complete for securing the best material available for our readers. But the Business Manager must be consulted, as it is only through that department that these accomplishments are possible. Do not allow your name to be stricken from the subscription books. Renew your subscription to-day.

WE have received from Dr. Austin Peters, Chief of the Massachusetts Cattle Bureau, a copy of his official report on foot-and-mouth disease to the State Board of Agriculture, of the date of Jan. 10, 1903. It gives a full history of the epizoötic as it has existed in Europe for centuries, together with its several previous American invasions, and reviews *in extenso* the present outbreak, together with a tabulated statement of the number of animals affected, their disposition, and their appraised valuation, as well as the percentage of value paid to their owners. A synopsis of these statistics shows that the number of herds then quarantined was 194, containing 3554 cattle. There had been released 47 herds, with 730 cattle. The U. S. Gov-

ernment had killed 90 herds of 1848 cattle, the appraised value of which was \$86,567.50, for which the owners had received percentages amounting to \$62,050.25. We regret that the crowded condition of our pages this month prevents the printing of some interesting extracts from the report.

AMERICAN WRITERS upon veterinary topics are attracting considerable attention from foreign periodicals. The editor of "German Review," in the course of his close investigations of Teutonic literature in search of material for his department, observes a rapid increase in the number of articles credited to the American journals. For instance, he has found during the past month the following papers which originally appeared in the REVIEW: "Peritoneal Filariasis," by Dr. John J. Repp; "Nodular Disease in Sheep," by Dr. M. H. Reynolds; "Leucoencephalitis Produced by Experimental Feeding," by Dr. Tait Butler, together with numerous extracts from other papers.

THE NEW YORK COUNTY VETERINARY MEDICAL ASSOCIATION honored itself at its February meeting by electing to honorary membership two veterinary scientists of world-wide reputations, men who have given their lives to a cause which has been immensely benefitted by their efforts. Such names as A. Liautard and Paul Cagny reflect honor upon the organization which thus honors them.

A CAREFUL perusal of the proceedings of veterinary association meetings will always prove interesting and instructive to readers of veterinary journals. The Allegheny County Association report in this number is such a one, for it contains the account of the remarkable treatment by serum of twenty-eight cases of tetanus, without a single fatality. This is such a unique experience as to easily constitute a record, and we must beg of Dr. Laberg, the fortunate hero of the episode, that he will furnish for publication the details of his method.

ORIGINAL ARTICLES

SPINAL RIGIDITY IN THE HORSE.

By W. L. WILLIAMS, V. S., NEW YORK STATE VETERINARY COLLEGE,
ITHACA, N. Y.

Diseases of the vertebral column are far less numerous than those of the spinal cord, yet they occur sufficiently often and in such variety as to constitute an interesting series of affections.

So long as they do not involve the spinal cord or its meninges their most prominent symptom is rigidity of the spinal column, and the differentiation of the various members of the group must rest chiefly upon corollary signs, which unfortunately do not always suffice, but permit or even lead to errors in diagnosis.

These difficulties are well illustrated by the following cases:

A.—CHRONIC SPINAL GLANDERS, WITH ACUTE GLANDEROUS GONITIS.

Patient an aged bay pacing gelding, presented for examination and advice because of acute gonitis. The general condition was bad, emaciation marked, a chronic cough was present, the back and neck seemed stiff, the nose "poked out," the coat harsh. One stifle was hot, swollen, tender, and the animal almost wholly refused to bear weight upon it. The gonitis had appeared suddenly only a day or two before presentation, and was without any history of injury whatever.

Diagnosis.—Articular rheumatism of stifle.

The gonitis yielded promptly to treatment, but the rigidity of the spine continued.

In about six weeks the patient was returned to us lamer than before, the gonitis having recurred in the stifle previously affected. The general condition of the patient seemed worse than before and a doubtful prognosis given, the diagnosis of rheumatism being continued.

The horse was disposed of and soon passed into the hands

of a third party, where his course could not be closely watched, but he was used unsuccessfully for racing purposes for two or three years. At a later date the writer was called to the owner's premises to examine a diseased horse, which was found to be affected with glanders, and a further inspection revealed yet another case. On inquiry it was learned that the owner had lost two other animals, evidently of glanders, the first to succumb having been the old pacing gelding of rheumatic fame!

This recalled a case of mild glanders occurring in a fine driving horse two or three years before, the origin of which could not be traced to any exposure. The "rheumatic" pacer and the driving horse had been owned by the same party, had been kept together and brought into the writer's territory at the same time by the original owner.

B.—ACUTE SPINAL GLANDERS WITH FARCY.

The patient was a five-year-old chestnut mare of roadster type, and used for grocer's delivery. She was in good flesh and had been vigorous and apparently in perfect health until two or three days prior to presentation for examination.

When presented the most marked symptom was excessive rigidity of the whole spinal column. The head was extended on the atlas, the nose poked out, the neck carried straight, the whole gait strikingly stiff.

The head could be bent neither to the right nor left, even though an assistant would attempt to hold the body straight while an attempt was made to force the head laterally by drawing sharply on the rein. She could not reach the floor with the nose nor in fact lower it to any marked degree, neither would she elevate the head beyond the general axis of the body. If the examiner's hand grasped the patient's chin from beneath and attempted to suddenly and forcibly push her head upwards she would suddenly move backward, emitting at the moment a sharp, loud cry of pain—a rare occurrence in horses. If made to turn she did so by keeping the spinal column rigidly fixed and pivoting on the two anterior or posterior feet. Rheumatism at once suggested itself, but ere expression was given to the

thought a rosemary of farcy buds were observed in the skin of one flank, and a close scrutiny of the nose revealed a slight sanguineous discharge. A few days' waiting gave a well-defined case of virulent glanders.

C.—ACUTE SPINAL OSTEO-POROSIS.

Osteo-porosis probably affects all bones of the skeleton simultaneously, but attacks with special virulence certain groups of bones in one case, another group in another case.

The patient was an imported two-year-old Clydesdale colt of extra size and form, in good flesh, with unimpaired appetite, was bright and presented in general the appearance of good health. He was, however, exceedingly stiff in his spine and his cervical vertebrae appeared to be enlarged. His locomotion in a straight line was fair though stiff, but he could not readily turn, and did so without bending his spine, pivoting on the fore or hind feet. He could neither raise nor lower the head, nor bend it to the right or left. When wishing to eat from the floor he would advance one fore foot as far as possible, and extend the other backward so that it rested between his hind feet. This expedient served to bring his nose to the floor at a point between the two fore feet without bending the spine.

Diagnosis.—Cervical articular rheumatism.

Treatment.—Cautery punctures over cervical vertebrae, followed by blisters. Internally alkalies and salicine. Slow improvement followed, and after about two months the patient was discharged. A few months later osteo-porosis became very apparent.

D.—OSTEO-MYELITIS OF CERVICAL VERTEBRAE. ARTHRITIS SICCA (ARTHRITIS DEFORMANS) OF SPINAL COLUMN.

Patient a seventeen-year-old bay mare used for farm and road work and for breeding purposes. Presented at the college clinic October 15 with the following history: She had been idle most of the summer and had not appeared as vigorous as usual. About July 15 she aborted at the ninth month of pregnancy, but was apparently none the worse for the accident. About September 15 she suddenly became very stiff in the spine,

which continued practically without change up to date of presentation. Her appetite and general body functions seemed little impaired, the most notable sign of systemic disturbance being progressive emaciation. In order to graze she resorted to the expedient of lying down, so great was the rigidity of the spine. Locomotion was so difficult that the patient was brought to the clinic in an ambulance.

The condition at date of presentation was : marked emaciation, extreme stiffness of the entire body, locomotion difficult and painful ; the head was held stiffly, with the nose poked out ; the animal could walk backwards comparatively as easily as forward. The entire spinal column seemed as stiff as if ankylosed ; the head could not be raised nor lowered to any great extent, nor could it be bent laterally in either direction. In turning she maintained the rigidity and accomplished the act by pivoting on the fore or hind feet. If her poll were pressed upon with the hand, instead of lowering her head to any marked degree, she started backwards almost convulsively, and it appeared that if the pressure was continued she would fall as a result of the pain induced by the downward pressure on the poll. The rigidity of the body was constant. The cervical vertebræ seemed enlarged. The respirations ranged during observations from 12 to 20 per minute, the pulse 48 to 60 per minute, the temperature 100.8 to 102.1° F.

Diagnosis.—Uncertain. Tuberculosis suggested and tuberculin used without reaction. Rheumatism and dry arthritis also thought possible.

Potassium iodide and sod. salicylate, 3 ss of each were given daily. Iodism was induced without benefitting the disease. The patient was destroyed on November 12.

The autopsy revealed osteo-myelitis with extensive necrosis and suppuration of the body of the seventh cervical vertebra. The sixth cervical and first dorsal segments also suffered to a smaller degree, with general arthritis sicca or arthritis deformans of the spinal column.

In three of the four cases cited, either no diagnosis or a

faulty one was given during the important stages of the affection. The cases do not necessarily represent the entire category of diseases causing rigidity of the vertebral column, but merely serve to emphasize the difficulty of diagnosis.

The foregoing establishes or suggests that spinal rigidity in the horse uncomplicated by disease or derangement of the cerebro-spinal nerve axis may among other things be induced by :

1. Glanders.
2. Tuberculosis.
3. Osteo-porosis.
4. Arthritis sicca (arthritis deformans, osteo-porosis).
5. Osteo-myelitis.
6. Rheumatism.

Glanders of the spinal column may be generally diagnosed by concurrent symptoms, such as pulmonary or nasal glanders, or farcy or by the mallein or bacteriologic tests. In Case A the chronic cough with general unthriftness should have aroused suspicion, though even then reliable diagnosis would have been difficult, as apparently definite visible glanders lesions did not appear for three to five years after the origin of the disease, and the mallein test had not yet been discovered.

Tuberculosis is so rare in horses that spinal tuberculosis may generally be excluded as highly improbable and the tuberculin test may be applied.

Osteo-porosis is generally confined to certain districts and may be safely excluded in instances of spinal rigidity arising in localities where the disease is unknown. The enlargement of the facial bones also usually occurs very early in the course of the malady. Lameness and enlargement of the articulations is frequent.

Arthritis Sicca, *arthritis deformans* or *osteoporosis*,* which

* The repetition of the term "osteoporosis" under two headings is regretted but seems inevitable. We have apparently two distinct affections, each equally entitled to the designation. One is characterized by a general porosity of bone with a special tendency to enlargement of the facial bones and has acquired the specific name of osteoporosis of solipeds.

The other, including ordinary spavin, ringbone, navicular disease, vertebral arthritis, etc. presents well-marked osteoporosis in the affected region, which is usually most

is characterized generally when causing spinal rigidity by co-existing ringbone, spavin, navicular disease either singly or collectively along with other members of this non-traumatic group of lamenesses.

It is not uncommon in these cases to find two spavins, four ringbones, double navicular disease with ankyloses and exostoses of vertebræ—lame in all four legs and stiff in the back. Generally chronic, it may be acute and the rigidity of the spine may occur without marked concurrent articular diseases of the extremities.

Osteo-myelitis of the vertebræ when affecting parts not open to exploration *intra vitam* certainly offers great difficulties. In the case cited the heavy muscles of this part of the neck covered the diseased part sufficiently to prevent its attracting our notice. Possibly tenderness would have been revealed had pressure been applied, though this was not observed higher on the neck where the pressure test was applied. Eventually, the patient surviving, the abscess would have pointed along side the scaleni muscles.

An enumeration of the blood cells would in all probability have shown marked leucocytosis, but suppuration was not suspected and no test made.

Even had a test shown leucocytosis and thereby indicated suppuration this might have existed in some internal organ not available for examination during life and have had no connection whatever with the spinal rigidity.

Rheumatism is a disease poorly defined and made to cover a wide range of conditions. How rare or frequent it may be in the horse it is difficult to determine. Certain it is that many painful affections of articulations, bones, muscles and other tissues are ascribed to rheumatism because of our inability or carelessness in diagnosis. Personally each case which has been diagnosed as rheumatism of a severe type has finally proven to be

marked about the articulations where the articular cartilage breaks down into the cavities formed in the bone beneath it. It is not now known if the relation between the two afflictions is intimate or remote.

some other well-defined disease. In mild cases which have been diagnosed as rheumatism, the recovery of the animal has prevented the uncovering of any serious error in diagnosis. Some make what may be termed a "therapeutic" diagnosis of rheumatism, in that it is an affection relievable by salicine, but other painful affections of the horse, notably osteo-porosis, seem to be quite favorably affected by this drug.

Spinal rigidity as a symptom of disease may, as we have shown, merely serve to indicate that one of a more or less indefinite number of diseases exists, none of which has any intimate relations to any other. Their diagnosis must rest, not upon any appreciable difference in character or intensity of the rigidity, but upon concurrent symptoms, which may give definite indication as to the nature of the malady. Other avenues for differential diagnosis are slowly opening up to the veterinarian, and may eventually aid much in this as well as other intricate groups of affections. The enumeration of the blood corpuscles and comparison between the red and white cells gives great promise in the diagnosis of hidden suppuration. The analysis of urine and other excretions should reveal much which is now hidden to us. Physiological chemistry along yet other lines, may eventually aid us, and the X-rays also promise assistance. Ordinary clinic examination fails us; we need the aid of more searching tests.

THE REVIEW APPRECIATED IN OREGON.—"Certainly, Mr. Editors, you ought to be thanked for your untiring efforts in making the REVIEW what it now is—a paper so full of such things as we who are situated away off on the western slope need to know, and so full and complete report of the A. V. M. A. convention. How any veterinarian pretending to keep up with the times can afford to be without such good help as is found in the A. V. R. I cannot understand."—(*D. D. Keeler, V. S., Salem, Oregon.*)

RACING STATISTICS show that the thoroughbreds competed for purses and stakes aggregating more than \$4,500,000 in the United States in 1902. New York tracks distributed about \$1,800,000 among the winners.

A HISTORICAL ESSAY ON THE RELATION OF VETERINARY MEDICINE TO THE MEDICAL PROFESSION.

By S. G. BURKHOLDER, M. D., M. D. V., ROTHVILLE, PA.

Read before the Meeting of the Schuylkill Valley Veterinary Association, Dec. 17, 1902.

We do not possess a concise history of the remote origin of the practice of medicine or the healing art, but we have every reason to believe that Egypt is the country in which all the arts of civilized life, including medicine, were first cultivated with any degree of success.

Moses in his writings alludes to the practice of medicine among the Jews, but as far as we can learn the privilege to practice was confined to the priests, whose treatment consisted principally of promoting cleanliness and giving hygienic and spiritual advice.

The early history of medicine in Egypt is very incomplete and rather legendary. We will have to turn to Greece for the first substantial pillar upon which to base the origin and foundation of the medical and veterinary sciences of to-day.

History tells us that the Grecians were skilled in the arts and sciences eight or ten centuries before the Christian Era, and that they practiced medicine on both man and animals with marvellous results.

Chiron of Thessaly, a descendant of the race, is recorded to have been the most skilled in the practice of the healing art, and paid equally as much attention to the equine as to the human race.

Æsculapius, another Grecian, who later, according to the legends, became the god of the healing art, and is really the founder of the modern school of medicine, was educated by Chiron and followed his footsteps. Thus we see that the patron saint of our physicians of to-day had for his preceptor a practical veterinarian as well as a practical physician. Æsculapius became a great teacher and dissected animals for the instruction of his pupils in the medical art as he practiced it.

By looking up the followers of Æsculapius we find that they

all practically followed his methods for several centuries.

Among his predecessors a few gained some prominence, among them being Erictheus, Varro, Xenophon, Calumella, Homer, Democritus and others, until we finally come down to Hippocrates, who was the 17th or 18th in descent from *Æsculapius*. He was the most celebrated physician of antiquity, a great writer, and is to-day referred to as the father of medicine.

Thus far they all based their anatomical knowledge upon dissections of animals, and apparently gave just as much attention to the diseases of animals as to diseases of man.

Calumella and Hippocrates wrote exhaustive treatises on the healing art as applied to animals. So you see Hippocrates might just as properly be designated father of veterinary medicine as father of medicine. Hippocrates was so immeasurably superior to his contemporaries that it seems to have acted as a check to further attempts at improvement for several centuries.

No real progress was made, especially in anatomy, owing to the researches being confined to animals, until the time of Erasistratus, about 250 B. C., who was the first to dissect human bodies.

Henceforth up to the beginning of the Christian Era no perceptible advancement is evident.

During the first part of the Christian Era the dissection of human subjects was forbidden under heavy penalties. The medical profession was divided into four or five different sects, who were constantly disputing with one another, and no material progress was made.

During the latter half of the second century of the Christian Era, Galen, a very celebrated physician and great writer, loomed into prominence. He was a great anatomist and in his studies he dissected apes as being the most like human subjects.

For the next thousand years the advancement in the art of medicine was very slow. In fact Galen reigned supreme throughout the civilized world till within the last 300 years.

No human subjects were openly used for dissection until the time of Frederick II., King of Sicily, about 1200 A. D. He

passed a law prohibiting anyone from practicing surgery without having first acquired some knowledge of anatomy by dissecting human bodies. His example was followed by others throughout the civilized nations.

Thus it appears that up to the time of the Christian Era the art of healing was studied and practiced for the relief of the brute creation as well as of man, all being treated on the same principle by the same physicians.

About 300 A. D. Vegetius, also a Greek disciple of Chiron, collected and revised all the works on the art of healing animals that had been published up to that time.

We find no evidence that the practice of veterinary medicine existed as a distinct science previous to this time, but we do find that those versed in the art of healing who principally confined their efforts to the care and treatment of the horse held honored positions and recognized ranks in the Roman army several centuries before the beginning of the Christian Era. The horse was an indispensable factor in the art of warfare, and those who looked after the medical needs of this noble animal had conferred upon them the foremost titles and honors of the land. This appreciation of the services of the veterinarian was not confined to the Roman Empire, but later the French, the Normans and the English held them in high esteem and conferred upon them similar titles of honor.

The early history of medicine seems to prove that the original pioneers of the healing art and their followers treated all ailments of both man and beast with equal consideration and skill. The two distinct professions as they appear to-day originated together, grew up together, were advanced and amplified by the same men and were one and inseparable for a period of at least 1000 years. After the dissection of human bodies by the physicians and their students received legal sanction, and various medical schools were established, the followers of the medical practice confined themselves to the human family more and more completely, until finally the poor beast was apparently dropped from their consideration altogether, so far as

the investigation and treatment of their diseases was concerned.

The practice of the healing art as applied to humanity became a distinct branch of science and grew gradually but slowly until the latter part of the 18th and beginning of the 19th century.

The 19th century may be considered as the epoch of physiological research and clinical observation.

We are getting ahead of our story. We left the animal creation uncared for, from a medical point of view, in the early part of the Christian Era. They were neglected by those best skilled in the art of ministering to their ailments and fell into the hands of an army of ignorant and superstitious rubbish.

Henceforth for several hundred years might be termed the dark age of the veterinary science. But, thanks be to an omnipotent providence, during the latter half of the 18th century, out of the oblivious sea of illiteracy and superstition, the veterinary profession has once more sprung, and with advancing steps has displayed energy, perseverance and skill, until to-day it is again working on a common plane with the medical profession.

The position held by the veterinarian and the duty he should strive to perform should not redound simply to the economic advantages of the stock-owner, but his aim should be to annihilate diseases from the lower animals, many of which are directly transmissible to man, thus preventing transmission of contagious and parasitic diseases and protecting human life. This is far more important than the treatment of disease.

While the physician is the alleviator of disease, the veterinarian is the preventor of its occurrence. He is the safeguard to public health.

The responsible position held by the veterinarian is not appreciated by the laity, nor even by many physicians, but the time is not far distant when his real value will be recognized and he will be an indispensable factor to every community and work in harmony with the physician in his efforts to relieve suffering and save human lives. The veterinary profession should be, and will be, represented in every town, city, county,

State and national board of health. The amount of physical suffering and death in man due to direct transmission from corresponding diseases among our domestic animals is not yet universally realized. Every medical school worthy of the name will in the near future include in its college curriculum a chair of comparative pathology and comparative medicine. Then, and not until then, will the exalted position of the veterinarian be generally recognized.

Let us enumerate a few of the more important diseases common to both animals and man, and thus bring out more strongly the relation the veterinarian bears to the medical profession.

I. Anthrax, though not so common now as formerly, may be transmitted to man through an abraded surface of skin or mucous membrane. It gives rise to a local lesion at the seat of inoculation. It may form a papule, rapidly becoming a vesicle, form a scab and dry off in a few days. It may become pustular, surrounded by an inflammatory and indurated area, giving rise to very distressing symptoms, both local and constitutional, and lead to a large slough and the patient recover. Or the infection may become general and the patient succumb. Thanks to the advancement of the veterinary science the disease is kept under control, and will finally be annihilated by means of successive animal inoculations of an attenuated virus.

II. Actinomycosis is another disease sometimes found in man. This is usually transmitted directly or indirectly from diseased cattle. The discharge from the local abscess on the animal's jaw may come in contact with an abraded surface or mucous membrane of man and give rise to the characteristic local lesion. Stablemen are often in the habit of chewing the end of a straw while in the pursuit of their duties, which, should it happen to be contaminated with the virus may be the means of inoculating the man. It is an undecided question whether or not the consumption of meat from animals afflicted with this disease has ever been the source of transmission.

III. Glanders, a disease equally fatal to both the human and equine race, is at present rather rare in man. This is due

to the fact that the veterinarian recognizes it in the horse in the early stages and the animal is properly isolated and destroyed, which prevents further infection.

IV. Tuberculosis, the destroyer of thousands of human lives every year, is too well known to need any discussion in this article. Suffice it to say, the only way to lessen its career of destruction is by a concerted and harmonious effort of both the veterinary and medical professions.

The disease is undoubtedly transmissible from animals to man (Professor Koch's theory notwithstanding) and the only way to get it under control is to prevent as far as possible every source of infection. This is not an easy matter and will take many years to accomplish. Both professions will have to be thoroughly organized, for our enemy, the tubercle bacilli, are a stealthy and treacherous foe. They do not attack us with the sound of the trumpet and roll of the drum, but swoop down upon us in darkness and in silence and suddenly appear in our midst when least expected. Owing to the latency of the disease they provoke, and the absence of outward manifestations, they are a potent factor in the propagation of the infection and make a most formidable antagonist.

The only way to subdue the enemy is to organize a powerful garrison of physicians thoroughly disciplined and strongly fortified to vigorously fight the enemy already in our midst, and prevent reinforcements from the bovine and other nations of the animal tribe by a dense line of vigilant veterinary pickets.

Some of the parasites causing disease in animals require man as a host before they can complete their cycle of existence, and very unwelcome guests they prove to be. Among these parasitic enemies may be mentioned the *Cysticercus Bovis* and *Cysticercus Cellulosa*, who, if they gain access to the alimentary canal of man unharmed, will develop into the *Tænia Saginata* and *Tænia Solium* respectively.

These, while they do not cause the death of their host directly, give rise to a great deal of discomfort and reduce his general strength and resisting powers so that he yields more readily

to unfavorable influences which if not relieved will shorten his life indirectly.

Another parasite more destructive than either of the above two, occasionally finds man a very unwilling but submissive entertainer. This is the *Trichina Spiralis*. We usually find them in the cystic form in the muscles of the pig, where they remain, and if their host is allowed to live long enough they finally die and undergo calcareous degeneration. If on the other hand the host is killed while the parasite is still alive and his carcass is consumed by man, they either succumb to the excessive heat the pork is subjected to before it is eaten, or if they escape that ordeal they gain their liberty in the alimentary tract of their second host or man. Here they develop, cohabit, propagate and die, leaving a small army of young parasites, who at once begin to migrate to the muscular portion of the human body. This process of migrating causes the host an unendurable amount of agony, to which he often succumbs.

Here again we find our benefactor, the veterinarian, on picket duty, carefully guarding the approach of the parasitic enemy with fixed bayonets ready to stay the death-dealing foe, thus preserving the comfort if not saving the life of his fellow man.

The inspection of animals in the public stockyards and abattoirs by the Bureau of Animal Industry is instrumental, no doubt, in saving the lives of a number of people annually by preventing diseased meat from being consumed by the general public and prohibiting diseased animals from being allowed to mingle with healthy animals and man, thus spreading the disease.

The system is defective only in that it is not extensive enough, which is due principally to a lack of legislative support. All animals whose carcasses are used for human food should pass a rigid ante-mortem and post-mortem inspection, and those which are kept for their milk, breeding and other purposes, should be thoroughly inspected by skilled veterinarians at stated periods, say every six months, and certificates of soundness should be issued for each animal thus inspected and

passed as sound. In this way tuberculosis and kindred diseases could be finally blotted out among animals; and by strictly observing the laws of hygiene it would be a comparative easy matter for the medical profession to exterminate some of these diseases from among the human family. Without the assistance and coöperation of the skilled veterinarian, backed by legislative support, these transmissible diseases can never be eradicated. It is only by the united efforts of the veterinary and medical professions that these results may be accomplished. The significance of the veterinarian's position as a preventor of disease among man and animals and his intimate relation to the medical profession, will become more evident year by year until finally history will repeat itself and the two medical sciences so closely related will be merged into one, when all prospective practitioners will be educated in the same school of medicine, the veterinary science simply becoming a branch of general medicine.

GREAT BRITAIN AND THE UNITED STATES are the only great nations which do not directly foster the horse breeding industry. The subsidizing of a few stallions, mostly thoroughbreds, is all the real help the horse breeders of the United Kingdom receive from their Government. American breeders receive none whatever. A bill was introduced in Congress last year providing for an elaborate system of insuring the production of suitable cavalry horses, but many Representatives and others mistook it for a scheme to unload on the Government a lot of stallions having no market value, and it died young.

BROUGHT DOG BACK TO LIFE.—*Cleveland, January 19.*—A large number of the physicians of this city are inclined to consider the experiments carried on by Dr. George W. Crile, of this city, in the use of adrenalin as being successful. The operation leading to the discovery of its power was performed on a dog by Dr. Crile, assisted by several other physicians. After an anæsthetic had been administered to a dog the suspension of respiration was effected by clamping the windpipe. After the dog was apparently dead for fifteen minutes a few drops of adrenalin were administered and artificial respiration resorted to, which proved successful in restoring the dog to a comparatively conscious condition.—(*Associated Press Dispatch.*)

ACUTE PLEURISY IN HORSES.

BY PROF. A. H. BAKER, CHICAGO, ILL.

Read before the Illinois State Veterinary Medical Association, at Chicago, Dec. 2.

Inflammation of the pleural membrane is very common in this climate. Most of the cases are sporadic, but a few of them are specific, being the localization of the specific fever of influenza. Sporadic pleurisy occurs as the original lesion and is uncomplicated in a majority of cases, but in many others it is seen in connection with pneumonia or rheumatic fever, then it exists oftentimes concomitantly with pericarditis. When uncomplicated it may take any degree of severity from a mild, circumscribed attack, being confined perhaps to a patch not more than two inches in diameter, to the involvement of the whole of the pleural surface. It may be right or left lateral or double. It may originate in either the costal or pulmonary pleura and extend to the other, but in most uncomplicated cases it probably arises in the costal, and the pulmonary becomes involved secondarily, but when occurring with pneumonia it probably arises in the pulmonary from extension to it from the parenchymatous tissue.

Etiology.—In all probability there exists an inappreciable predisposing constitutional condition that directs the localization of the disturbance in the pleura, but the appreciable etiological conditions may be divided into idiopathic, traumatic, diathetic and infective, and many cases occur deuteropathically.

The idiopathic cases arise usually from exposure to cold and dampness, especially when the temperature is suddenly lowered. In this connection it must be remembered that fatigue and exhaustion from hard work act as a predisposing cause, for a fresh horse, in most cases, would withstand the same exposure with impunity. The traumatic cases are due to direct injuries to the pleura by foreign bodies puncturing the chest wall, broken ribs lacerate or chafe it, and septic infection aggravates it. The diathetic causes are those which produce it by the localization of a

predisposing constitutional condition, such as rheumatic fever and old age. The infective cases are those caused by specific disease as influenza, irregular strangles. The deuteropathic cases include all of those that occur from extension of the inflammation from adjacent or contiguous tissues to the pleura, such as pleuro-pneumonia, in which the pneumonia is the original lesion and the pleurisy is secondary by extension.

Special Pathology.—We divide the course of the disease into four stages, viz. : First, congestion ; second, dry inflammation or friction stage ; third, stage of effusion, which we will divide into two parts, and, fourth, the stage of absorption. In the first stage, the pleura becomes red in streaks or patches ; these become confluent by extension in the course of an hour or two, when the pleuræ show a diffused redness. This stage runs rapidly into the second, when the pleuræ become dry by suspension of function and the friction sound is heard by auscultation. This stage is also short, being only about six hours in length, when it runs into the first part of the third or exudative stage. At this time a plastic exudation occurs on the surface of the membrane, coagulates, and in some cases becomes adherent to its neighbor. In many cases the inflammation subsides at this time, the false membrane softens through fatty degeneration, liquifies and is absorbed ; but if not it runs into the second part, or stage of effusion, and large quantities of serum are poured out, more or less filling the pleural cavity, constituting what is known as hydrothorax. In cases that recover the fourth stage follows and absorption of the effusion takes place slowly. The third stage is indefinite in length according to the severity and extent of the inflammation, but in a fair average case it is about eight or ten days. In this stage suppuration may take place and pus is mixed with the serum, known as empyema. All fatalities occur in this stage, either from asphyxia by the lungs being floated up to the back and interference with the action of the heart, or from general debility, prostration and collapse from the absorption of the pus of the empyema. The fourth stage is long and tedious, requiring from four to eight

weeks for absorption to take place to enable him to go to work.

Symptoms.—It is often preceded by a rigor, and before it is fairly over sharp lancinating pains with ralling and sweating are manifested, resembling spasmodic colic, but if the pulse and temperature are taken they will be found to be accelerated with a tinge of hardness and elevated to 104 or 105° F., which will distinguish it from colic, in which there are no disturbances of the pulse and temperature. As it runs into the second stage, the patient gets quiet, persistently stands with elbows turned out, abdominal muscles drawn tightly, producing the pleuritic line from the elbow along the cartilages of the ribs to the point of the hip. The breathing is careful and shallow but not labored, but is very painful, in which a grunt is emitted with nearly every expiration, and the grunt is particularly prominent if he is forced to move, especially if he is turned round shortly. A grunt in acute disease is always indicative of pleurisy. By auscultation a distinct friction sound is heard, and percussion causes pain, especially if the fingers are pushed into the intercostal spaces. The pulse runs about 60 and is small and hard; the temperature runs at about 105° F. The appetite is lost and the excretions are diminished in quantity and altered in character. The third stage is marked by more or less hydrothorax, and dyspnoea in proportion to the amount of effusion. In a fatal case the nostrils are dilated, the flanks heave, the back is roached with each inspiration, the expired air is cold, the mucous membranes become livid, emaciation has been rapid and debility great, he gets cold, sweats in patches more or less as death approaches. The diagnostic evidences of hydrothorax are dullness under percussion, absence of all sound by auscultation below the water line, and an increased respiratory sound above it. If the hydrothorax exists a week or longer the lower part of the chest becomes oedematous, especially between the forelegs, and the temperature persists at about 104° F.

Treatment.—If seen in the first or second stage, heroic treatment should be given, such as aconite, belladonna, spirits of nitrous ether, nitrate of potash and acetanilid in liberal doses

and repeated often for 24 to 48 hours, and apply smart counter-irritations over the sides of the chest, and repeat every twelve hours. After two days drop out the aconite and add nux vomica. If it runs on to hydrothorax to a greater extent than one-third full of the chest, paracentesis thoracis is indicated. After the operation give iron and alcohol for two to four weeks and nourishing diet. If empyema develops as proven by the purulent character of the discharge from the canula at the time of the operation, rinse out the chest with a one-fifth of one per cent. solution of permanganate of potash to flush out the pus, then rinse again with a one per cent. aqueous solution of tr. of iodine.

OVARIOTOMY FOR KICKING.—Dr. Peters, of the Nebraska Experiment Station, is thus quoted: "I was amused at reading the cures given for mares that kick in the stall. A better remedy is castration. Very generally the nervous, irritable, kicking mare has a diseased ovary, which can be removed without difficulty, operating through the vagina. The whole temper of the mare will be changed."

DECREASED LICENSES GRANTED TO NEW YORK PHYSICIANS.—The annual report of the New York State Board of Medical Examiners shows that the number of candidates for medical licenses reached its high water mark in 1898, when 869 applicants appeared. There has been a steady decrease since, only 685 applicants for license appearing in 1902. Since the establishment of the board, 7,034 candidates for license have been examined, of whom 5,528 or 78.5 per cent. have been successful.

PROSECUTING THE OWNER OF A DOCKED HORSE.—A coachman in Denver has got into trouble with the authorities because possessed of a horse with a docked tail, against the peace and dignity of the commonwealth, as per statute duly made and provided to fit such cases. The coachman acquired the ownership of a horse that was not registered as minus a part of his dock at the time the law went into effect. He was arrested and fined as soon as he showed up on the street, driving the short-tailed but unregistered as such animal. The Denver Driving and Riding Club has taken up the cudgels for him and has taken the case on appeal to a higher court.—(*Breeder's Gazette*.)

REPORTS OF CASES.

"Careful observation makes a skillful practitioner, but his skill dies with him. By recording his observations, he adds to the knowledge of his profession, and assists by his facts in building up the solid edifice of pathological science."

THE USE OF HEROIN IN PNEUMONIA.

By GEORGE W. MEYER, D. V. S., New York City, N. Y.

Heroin is one of the best of the new remedies in the treatment of affections of the respiratory apparatus. In medical journals for the past few years, we read that it is fast replacing morphine and codeine in the treatment of coughs and colds, as it does not produce a habit and very rarely causes unpleasant after effects; in fact, in those cases where unsatisfactory results have followed its use, the dose has been too large. For the past few years the writer has watched its action, when given to horses suffering with pneumonia, and experimented with different size doses, and invariably found that to begin with small doses and gradually increase, the results were far more gratifying, although in several instances I found it did not agree with the stomachs of some patients. They would not return to feeding if heroin was given, but this characteristic I have not noticed since the introduction of heroin in the preparation of glyco-heroin (Smith); the combination of the stomachics added to it has overcome this disagreeable feature of the drug.

Although, as in every other new remedy, idiosyncrasies will be encountered, in these the dose must be regulated, beginning with the minimum and increasing to maximum, if necessary.

In acute pneumonia the harassing cough is speedily controlled and the animal's comfort was increased by the stimulation of the respiration, the dyspnœa becoming much less marked, and as a sequence a fall of temperature can be looked for. Although it is *not* a hypnotic, the fact that it does in every case relieve the distressing cough which causes pain, it ensures quiet and rest, thus giving the patient the same feeling as a refreshing sleep would to the human patient.

But the chief use to which glyco-heroin (Smith) can be put is as a sedative for the cough, and to prevent the distressing and disagreeable stagnation of secretory products in the lungs. (No drug can compare with it in this particular.) I have noted cases that have come under my observation with painful

and almost constant cough, that were relieved considerably after the administration of two or three doses, so prompt was its action.

What digitalis does for the heart, heroin does for the respiration.

A short clinical report of a few cases that I considered especially serious on account of the combination of laryngitis and acute pneumonia, would probably be interesting. Owing to the difficulty of swallowing, no bolus could be given, therefore relying entirely upon liquid medication.

Case No. 1.—Black gelding, six years old. Owner purchased him about two weeks previous, coming fresh from the West—therefore, not being acclimated, was an easy mark for a cold, especially while making trips across the draughty ferry-boats for past few days. It was about 5 P. M. when he was brought in; driver complained horse was going very slack and was making a noise, that he had not done before. Standing at a distance, one could hear the respiration, and was very sensitive on slight pressure to throat. Temperature 106° , pulse 72, respiration 60. A diagnosis of laryngitis was made, and upon examination of the lungs, found lower portion of both consolidated, complicating it with pneumonia. Counter-irritation was applied to throat. Glyco-heroin (Smith) $\frac{5}{3}$ i, was given. After two hours time $\frac{5}{3}$ iss was given; after another interval of two hours $\frac{5}{3}$ ii were given. At about eleven o'clock P. M., temperature was taken, 104° F., the wheezing noise had stopped, respiration slowed to 40. Following day was put on glyco-heroin $\frac{5}{3}$ i every two hours; temperature was 102° , and there remained for the following four days; was eating two quarts of feed with a moderate supply of hay, three times a day. On the fifth day temperature 101° , pulse 48, respiration 22, with now and then a loose cough, which of course was looked for. Appetite was good, eating all that was given. The following five or six days the temperature ranged between 101° and 100° , with pulse and respiration normal.

Case No. 2.—Brown gelding, had laryngitis, with a temperature of $105\frac{3}{5}^{\circ}$. Was put on glyco-heroin; began to improve day by day until after third day temperature was down to $101\frac{2}{5}^{\circ}$, owner thinking he was well enough to send to his branch stable, had him led down a distance of about two miles. Next morning was called in, as horse seemed very sick and would not eat. Temperature 105° , pulse 60, respiration 36, and labored. Percussion and auscultation of the chest showed a large

surface of left lung and small surface of right lung affected. Knowing the tenderness of throat this patient had, did not wish to irritate it by giving bolus, so placed him on glyco-heroin, $\frac{3}{4}$ i every three hours. Following day, temperature 104° , respiration and pulse considerably improved. Appetite returning, dose increased to $\frac{3}{4}$ i every two hours; when on fifth day temperature was 102° , respiration 20, pulse 48. This condition was held for the next two days, when upon examination we found temperature 101° , pulse 42, and respiration 18; dose again reduced to $\frac{3}{4}$ i, t. i. d., temperature, pulse and respiration normal and good appetite. The patient was allowed the freedom of his box-stall until he would be strong enough to go in harness.

Case No. 3.—Strawberry roan gelding, seven years old. Another case of laryngitis, complicated with pneumonia. Temperature 105° , pulse 66, respiration 40, no appetite whatever. Same course of treatment was given, beginning with $\frac{3}{4}$ i glyco-heroin (Smith), every three hours. Following morning temperature 104° , pulse 54, respiration 30, appetite fair, dose increased to $\frac{3}{4}$ i every two hours, with the result of respiration 20, pulse 48, temperature $103\frac{2}{5}^{\circ}$; no change in dose until just a week had passed, when all symptoms were nearly normal; temperature $101\frac{2}{5}^{\circ}$, appetite good, dose was reduced to $\frac{3}{4}$ i t. i. d., for three more days, when the cough was very seldom heard, was looking bright and ate with a relish, was kept in until he would be strong enough to resume his labor.

Thus I could continue with case No. 4, 5, 6, 7 and so on for more than a dozen; each would read the same; each case has had same termination. I have been using it on all cases of cough, both chronic and acute, and in pneumonia since last July, and in my hands it has acted like a specific. It, therefore, would be excusable in me to write enthusiastically about glyco-heroin. What it has done for me, it ought to do for others, since no drug can vary in its expression; provided you get a perfectly reliable preparation. Select your cases well, use discretion in your dose—I'm sure it will not disappoint you.

TRIKRESOL IN THE TREATMENT OF PARTURIENT PARESIS.

By S. BRENTON, V. S., Detroit, Michigan.

About five years ago I commenced the use of trikresol as a general antiseptic, and the results have been so satisfactory that two years ago I substituted it for iodide of potassium in the treatment of parturient paresis, and am so well pleased with its effects that I feel like reporting it, in hopes some of your read-

ers may give it a trial with like results. When called to a case I provide myself with a quart of sterilized water, some trikresol and glycerin, equal parts, a couple of ounces of fluid extract or powdered nux vomica, infusion apparatus (consisting of five feet of small hose, with a milking tube in one end, and a glass funnel, holding about four ounces, in the other end). Should the patient be found lying on her side, as is frequently the case, I first empty the udder as thoroughly as possible, disinfect the teats with a one per cent. solution of trikresol, and after mixing two drams of the trikresol and glycerin with the quart of sterilized water, inject the quart in equal quantities in each teat with the milking tube, hose and funnel, as before described, placing the animal on her sternum and keeping her in that position with bales of hay, straw or whatever may be most convenient. I then empty the bladder and remove any placental membrane, should there be any remaining, and irrigate the uterus and vagina with a one-half per cent. solution of trikresol, place two drams of the nux vomica on the tongue, and have the dose repeated every six hours until the animal regains its feet, and then have it given twice daily for two or three days. In from one to twenty-four hours, according to the severity of attack or length of time before treatment, the patients regain their feet, and in every case so treated thus far we have had complete recovery, with no bad results following. One injection is all that is necessary in the majority of cases, but it may be repeated in from six to eight hours in severe cases.

Dr. Dunphy, ex-State Veterinarian, of Quincy, Mich., reports the same results, and Dr. Waldron, member Michigan State Veterinary Examining Board, of Tecumseh, Mich., has treated as many as five cases in one day, all recovering, and only one requiring the second injection. Dr. Judson Black, of Richmond, Mich., is also using the trikresol treatment and can recommend it.

Trikresol is an antiseptic and disinfectant, containing the ortho-, meta- and para- cresols in pure state. It is a clear watery-white fluid, having three times the disinfectant value of carbolic acid and only one-third of its toxic or caustic effects; retains its bactericide power in the presence of albumins, so that its use is indicated in the milk glands.

Trikresol can be secured by all veterinarians who cannot obtain it through their druggists from Schering & Glatz, 58 Maiden Lane, New York, who are sole agents for the product in the United States and Canada.

BARIUM CHLORIDE.

By Drs. ANGLICKER and SCHUMACHER, Milwaukee, Wis.

Professor A. Liautard, in the January number of the AMERICAN VETERINARY REVIEW, says some words in favor of barium chloride and its extensive use in Europe. He also admits that we hear very little about it in this country. While the Berlin school has made a record for the drug, none of the other schools recommend it, and its use is prohibited to the veterinarians of the German army, who are mostly graduates of the Berlin school.

We will describe a few cases in which we administered barium chloride intravenously, and give the results, which will explain why we discarded its use:

Case I.—Gray coacher, six years old, sick with flatulent colic, driven by the coachman for two hours to cure; subdued tympanites with enterotomy, aromatic spirits, oleum Widmeyeri, and cold water clysters; finally, to evacuate bowels, gave 0.25 of barium chloride three times, with intervals of fifteen minutes. Animal showed great depression after third dose; pulse became imperceptible after being strong, and died with symptoms of rupture of stomach or intestine, but could find no such lesions on post-mortem.

Case II.—Bay horse, seven years old, sick three days with constipation colic. Had received compound cathartic ball, two litres of ol. lini, and 0.032 of arecolin, without effect. Temperature 38, pulse 40, some peristalsis. Gave 0.5 of barium chloride; died within ten minutes, with symptoms of internal haemorrhage (anaemia of all visible membranes).

Case III.—Black horse, about fifteen years old, dissecting subject; taken sick with colic; gave 0.32 of barium chloride, repeated in fifteen minutes, whereupon he had one evacuation; gave another dose after twenty minutes; death apparently by asphyxia; heart beat perceptible five minutes after horse stopped breathing.

Case IV.—Gray horse, apparently healthy, 9 years old; to be operated upon for dislocation of patella; decided to evacuate bowels, and gave Dr. Callender's dose (0.65 of barium chloride); fifteen minutes later the horse reared, fell over and was dead without a struggle. The symptoms displayed by this patient were identical with those of Case II.

Now, will some other practitioners kindly publish their experience with B. C.?

FOREIGN BODY IN BUCCAL CAVITY.

By Drs. ANGLICKER and SCHUMACHER, Milwaukee, Wis.

A peculiar case of stomatitis and anorexia in the horse was brought to our observation lately. The horse had refused food for several days and great amounts of very offensive smelling saliva were running out of the mouth. On manual exploration a piece of corncob was found wedged in between the fifth molars of the upper jaw so tightly that we had to resort to instruments to dislodge it—and the horse was cured.

HANOVER'S SKELETON.—The bones of this mighty son of Hindoo, perhaps, all things considered, the greatest thoroughbred this country ever saw, have been mounted and will soon be placed in the museum of the College of Agriculture in Lexington, Kentucky.

AN OLD SUBSCRIBER.—Dr. Wm. H. Gribble, Washington C. H., Ohio, the model Secretary of the Ohio State Veterinary Medical Association, writes: "In 'News and Items' I see one gentleman has taken the REVIEW for fifteen years. We can beat him, as we only lack February and March of having eighteen volumes, sixteen of which are well bound and occupy a most prominent place on our book shelves, and are used when in a quandary as a man uses an encyclopædia."

THE ANTIQUITY OF CASTOR OIL IN MEDICINE.—This household remedy—matchless as a laxative under many circumstances—seems not to have been overlooked in remote antiquity. Victor Loret, of Lyons (*Revue de Médecine*, August, 1902; *Münchener medicinische Wochenschrift*, November 25th), reminds us that in the time of Herodotus, 500 years before the Christian era, the plant was industriously cultivated in Egypt, and that Strabo mentions the use of the oil by inunction as common among the lower classes of the Egyptians.

INDUCED SUBCUTANEOUS EMPHYSEMA.—A new form of "doping" animals for the show ring was tried and detected at the recent International Live Stock Exposition, in Chicago, says the *Breeder's Gazette*. An exhibitor of beef cattle had taken an air pump and forced air under the hide of some of his fat steers to fill out the hollows where the corn had failed to do its work. The officials detected the fraud from a cracking noise heard when they rubbed their hands over the parts that were pumped full of air.

EXTRACTS FROM EXCHANGES.

GERMAN REVIEW.

By ADOLPH EICHHORN, D. V. S., Bureau of Animal Industry, Albany, N. Y.

OBSTRUCTION OF THE DUCTUS CHOLEDOCHUS WITH BILE STONES, IN A DOG—OPERATION AND RECOVERY [*Prof. Dr. C. Parascandolo*].—After an anatomical description of the ductus choledochus, some clinical remarks on biliary calculi, and a brief review of the methods applied in removal of biliary calculi in human surgery, the author describes a case, where in a six-year-old hunting dog the diagnosis of obstruction of the ductus choledochus, with complete retention of bile, was established. Performance of the operation for the removal of the obstruction: After the usual preparation of the patient and anaesthesia, the animal was placed on its back, a vertical incision was made through the musc. rect. abdom., which reached to the peritoneum. This was opened, the liver turned upward, and the gall-bladder to its cystic duct exposed. From the latter, after opening the gall-bladder, three stones were easily removed with the aid of a forceps. The obstacle proved to be in the retro-duodenal portion of the duct, which was opened. It contained accumulations of different-sized stones and small concrements. The same were removed with a spoon and forceps. After ascertaining the complete removal of the obstruction, by inserting a rubber sound, which was passed into the duodenum, a drain tube was introduced and the opening closed by sutures. The gall-bladder and the abdominal opening were also closed by sutures. The healing of the wound was normal. From the sixth day on, the icteric discoloration began to disappear, and rapid improvement in the general condition was noticeable. In four weeks complete recovery took place.—(*Archiv. f. wiss. und Thierheilk.*)

CORECTOPIA, DYSCORIA, ALBINISMUS, AND NYSTAGMUS IN A DOG [*Prof. W. C. Schimmei*].—One of the congenital abnormalities of the iris, is the abnormal position of the pupil (corectopia), which generally appears with the abnormal shape (dyscoria) of the same, in our domesticated animals. The author has seen the following case: In a few-months-old German bull dog, almost entirely white, having only a few small yellow spots, the color of the iris was white, with a pearly shine; near

to the curiculus minor iridis, it showed a few pigmentations, and cloudiness. The pupil proved to be in the middle of the lower portion of the iris, from which it contrasted greatly, by its dark color, was round, toothed, and contained fine fringes. The conjunctiva of the bulbus showed a chronic chemosis, which in all probability was congenital. Abnormal conjunctival secretion was not present. The eye-lids were kept normally open, and the pupil reacted to light and atropin. The bulbus made a slight but quick oscillatory movement (nystagmus). Both eyes, which in size and tension were normal, showed the same defects. The vision was normal, and showed only a deviation when going up on an incline, knocking against different objects, and threatened to fall. This occurred on account of the lower eye-lids preventing the entrance of the rays into the pupil, which was placed in the lower segment of the iris. The examination with the ophthalmoscope revealed the absence of pigments in the choroidea (albinismus) and diminished vascularity in the pupil. The sensibility of the retina appeared increased, through which possibility the nystagmus was produced.—(*Oestr. Monatschr. f. Thirh.*)

EPILEPSY IN A HORSE DUE TO BRAIN ABSCESS [H. Schindler].—The patient, a gelding, six years of age, belonging to a cavalry regiment, manifested for some time impaired appetite, and due to this was in poor condition. On the 30th of October, in the afternoon, the horse dropped suddenly in its stall, being attacked with severe convulsions, accompanied with profuse perspiration, and trembling. These symptoms lasted only for a short time, so that on the appearance of the author, the horse seemed apparently well, partaking slowly of the evening food. On the 31st of October the patient refused the morning food, and during cleaning had a repeated attack as described above, but which appeared more severe, and of longer duration. Recovering from the same, the horse showed passing paralytic symptoms of the hind part, being unable to rise without assistance. The horse was then removed to the hospital, during which it manifested great weakness in the hind quarters, staggering to such an extent that it appeared necessary to support the animal. At the hospital the weakness disappeared, and the animal showed good appetite and thirst. Temperature 40°C., pulse 60 and irregular, respiration 16 and quiet, defecation and urination retarded. The general condition, however, was not dull, but the horse was very irritable, especially so by elevating its head. During the forenoon the horse had no other attack,

and did not make the impression of a very sick patient. At three o'clock in the afternoon, efforts were made to administer some medicine, during which the horse had another severe attack of epileptic paroxysms, to which the animal succumbed. This last attack, which was observed by the author, manifested itself, in first both right legs, they being drawn spasmodically to the body, and the head distorted to the right, after which the animal dropped, and died inside of ten minutes, having severe cramps and convulsions. The autopsy revealed the following conditions : An abscess of the size of a hazel nut on the upper portion of the left hemisphere of the cerebrum with a number of small abscesses in the neighboring parts. There was also pachymenitis, with two cystic new formations of the size of beans. And after the removal of the brain, a deformity of the cranial cavity was observed, as the left lateral wall was considerably more concaved than the right one. Traces of any traumatic injury to the skull could not been detected.—(*Oestr. Monatshr. f. Theirheilk.*)

FILARIA IMMIS IN THE HEART OF A DOG [*Oreste Fan-tin*].—The author received for autopsy a dog with the following history : The animal showed the first symptoms of a disease in the early part of June. They were: dullness, impaired appetite, cough, thirst, paleness of the visible mucous membranes, with a few eruptions on the buccal mucous membrane ; also periodically a weakness of the hind part was noticeable. After some time, and under treatment with codein, the cough disappeared, but the animal became constipated, and a diffused abdominal swelling made its appearance. The dog was very emaciated, showing great debility, so that it was unable to move. The autopsy revealed the following conditions : ascites, about ten liters of fluid, having the appearance of blood serum, was accumulated in the abdominal cavity. Anæmic condition of all the organs, and an exceptional hypertrophy of the heart. On closer examination of this organ, the author found four worms, of about 30 cm. in length, wound around the tendonous threads of the tricuspid valve in such a manner that a function of the valve could not have taken place. The microscopic examination proved that the worms were female specimens of the *filaria immitis*.—(*Oestr. Monat. f. Thierheilk.*)

FOR TREATMENT OF ECZEMAS, Averbach praises highly naphtalan in the following prescription : Rx. Naphtalani, 20.0; zuci oxydati, amyli tritici, $\ddot{a}a$ 10.0; mentholi, 0.05,—1.0. M.f. pasta mollis. Menthol aids in relieving the itching.

MESOTAN, an external antirheumatic agent (Dr. Ruhemann.) Mesotan is a metyloxymetylester of salicylic acid. The following is the formula: Rx. Mesotan, 25.0; oleum olivae, 25.0; ol. lavandulae, gtt. v. To be applied three times a day.

ENGLISH REVIEW.

By Prof. A LIAUTARD, M. D., V. M.

PARASITIC EMBOLISM [*J. Connochie, M. R. C. V. S.*].—A five-months-old foal which has always done well since his birth, begins to droop. He is scarcely able to stand, very weak at rising and stiff behind when it moves; he has a bad countenance, abdomen is contracted, oedematous hind legs. His temperature is up, 105° ; breathing hurried. Pulse is alarming, although perfectly steady, it is very quick and throbbing; the artery is full and tense. On auscultation the heart is violent. Still there is some appetite left, the foal sucks his mother, but has to be assisted to stand up. External and internal stimulants are resorted to, and tincture of strophanthus with port wine administered twice a day. This treatment seems to help him, and the foal slowly but gradually improves in every way except in the pulse and heart's action. One morning he was found dead, after a sickness of three weeks. At post-mortem the cæcum was found discolored, inflamed and containing a large quantity of dark, red-stained pulpy ingesta. The mesenteric glands were found enlarged, the mesenteric artery was thickened and surrounded with thick exudate of old standing. On cutting this and scraping it from the blood vessels, several *Strongyli armatus* were discovered. On examining the heart, it was found with a peculiar round shape, the apex not being in evidence, due to the presence of an enormous ante-mortem clot distending the right ventricle, and extending through the auricle and the pulmonary artery. All the valves were thickened. No parasites in the heart. All the other organs were healthy.—(*Vet. Journal.*)

OPEN-AIR TREATMENT OF PNEUMONIA (*J. Storie, M. R. C. V. S.*).—"Would it, perhaps, be advantageous in treating such cases to make sure that they had a full supply of pure air rather than too little?" Such are the last words of the author in his records of the cases he had to treat while acting as veterinary officer in camp at Dunbar. He had 300 horses under his care, which were kept in quarters very much exposed and open,

and in which everything but comfort, specially for sick horses, had to be provided. He had some box-stalls, but far from being what they ought to have been, and with all that acute cases of pneumonia broke out. He had one case, then another, and again two and so on until at last he counted 10 cases; all presented more or less the same condition: viz., very high temperature, in one 106°, high pulse, pain in the chest, cough, dullness on percussion, loss of respiratory murmur, etc., etc. The treatment consisted in hot water applications, renewed every two hours at first, then every four and stopped after that, fever medicine and liniment on the chest. On the fourth day the temperature was normal, the pulse also, crepitations were heard in the consolidated lungs and recovery went on rapidly. The same treatment was carried out in all the cases, and all made similar rapid recoveries.—(*Vet. Journal.*)

A CASE OF FIBRO-SARCOMA [*E. W. Hoare, F. R. C. V. S.*].—It was no trifling undertaking to attempt to remove this growth, which weighed not less than six pounds, and, while in appearance not enormous, was nevertheless found extending under the root of the tail, attached to the sacrum and firmly adherent to the rectum. Existing for a long period and situated between the ischial tuberosity and the root of the tail, it had increased, reached quite a large size, and pressed the anus towards the left side, partly occluding it from view. The tumor felt firm, was evidently deeply seated and had a base of considerable size. The animal properly secured and chloroformed, an incision was made around the base of the tumor, so as to allow sufficient healthy skin to cover the wound. Dissecting of the growth was then proceeded with, but profuse haemorrhage was very troublesome, and, notwithstanding a great deal of care, the rectum, to which the tumor was attached, was wounded and its walls opened. Finally, however, after a long and tedious dissection, the base of the tumor being found to extend too far inwards to remove it entirely, attempts were made to sever it with the ecraseur. Finding it impossible to do so, although two instruments had broken in the attempts, the mass was removed with the scalpel. While sewing the walls of the rectum, the animal suddenly collapsed, the heart and respiration ceasing simultaneously. Examination of the growth proved it to be of fibro-sarcomatous nature.—(*Vet. Record.*)

AN ERROR IN DIAGNOSIS [*E. W. Hoare, F. R. C. V. S.*].—“We make more mistakes from not looking than from not knowing,” is a saying of Sir Wm. Gull, that the author re-

minds us of in relating this case, where he shows the necessity of making in every instance a complete examination of a patient where the symptoms do not point to a definite affection. A large Irish terrier dog, about six years old, was brought to him for treatment with a history of obstinate intestinal obstruction for two days. The symptoms were rather in accordance with the history, and treatment (calomel and rectal injections with long canula) prescribed. These failed in their effects and in a few hours the dog died. At the post-mortem, the pelvic cavity was found filled with an enormously distended bladder containing dark colored urine. Rectal examination had not been made at the time the dog was left for treatment, and as he made no efforts to urinate, attention had not been directed towards a condition which might have been relieved.—(*Vet. Record.*)

DR. W. H. DALRYMPLE, of Baton Rouge, La., was in attendance upon the meeting of the National Live Stock Association at Kansas City in January, where he read a paper. From there he went to Lincoln, Neb., where he addressed the Improved Stockbreeders Association on the immunization of Northern cattle, finally speaking before the Agricultural Students' Association of the University of Nebraska on "The Agricultural Possibilities of the South." Great is the versatility of our Southern *confrère*.

VOMITING IN A HORSE—RECOVERY [*G. A. Morgan*].—This is a rather common case, with the history of a horse which suffered with intestinal troubles for some forty-eight hours, and which, notwithstanding the fact that he presented symptoms of vomiting, did recover. During the illness, however, the animal presented symptoms rather interesting and which are commented upon by the author as follows: The animal had not been working for some time; it had, however, been turned out to grass daily. The mucous membrane of the eye and the membrana nictitans led the author to suspect rupture and internal bleeding, which he thought was confirmed by the subsequent vomiting. Still a change in the diagnosis had to be made because of the change in the coloration of the mucous membrane, the capillaries becoming very prominent and black in color. The animal's subsequent recovery was a welcome although unexpected *finale*. Another thing must be mentioned, viz., that the hair of the mane and tail came out in handfuls, which, says Mr. G. A. M., he understands is a fairly accurate ante-mortem sign.—(*Veterinary Record.*)

BIBLIOGRAPHY.

COMMON COLICS OF THE HORSE. By H. Caulton Reeks, F. R. C. V. S. 224 pages, with 8 illustrations. London : Bailliere, Tindall and Cox.

In the midst of our interest in the important rôle that is being played by bacteriology in the practice of modern medicine, our attention is suddenly attracted, and our interest earnestly aroused, by the presentation of a subject which, while scientifically dealt with, certainly suggests by its title, indisputably, the practical side of veterinary medicine. No practitioner of veterinary medicine will dispute the assertion, that, no matter how well a veterinarian may be fitted for every other branch of his calling, his ability to successfully or unsuccessfully cope with the conditions resulting from acute or subacute digestive derangements, may be translated into his success or non-success as a practitioner. This point being conceded, the veterinary profession will welcome a little work devoted entirely to the elucidation of this subject. This work, coming as it does from the pen of a man whose scientific knowledge has matured through many years' application to practice, in a field offering peculiar opportunities for study in this direction, and who is a close observer and careful investigator, suggests to the practitioner its incalculable value. And, as one passes from chapter to chapter, the realization of the suggestion becomes more and more apparent. In Chapter I. the author treats of "Colic" and its definition, and points to the inadequacy of the term, as expressing the many and varied forms of abdominal pain which we are able to recognize. In this chapter, he also calls the reader's attention to the fact that one day's illness in the horse from "stoppage" is equal to practically a week's suffering in a man from the same cause; which he fully explains in a later chapter, which, after digesting it, leaves no wonder in one's mind that a few hours and frequently a few minutes are sufficient to rob one of a patient from this disorder. In Chapter II an example of close observation and original thought is forced upon us under the head of "Surgical Anatomy of the Abdomen." An illustration here depicts the abdomen divided into a superior and an inferior zone, and each zone divided into an anterior, middle and posterior region. These he has named from their anatomical relations, into : Upper zone—(1) Superior diaphragmatic, (2) superior lumbar, (3) superior pelvic. Lower

zone—(4) Inferior diaphragmatic, (5) inferior lumbar, (6) inferior pelvic. These landmarks suggest the relation of the viscera to the walls, and the character of the symptoms point to the special viscera involved ; all of which tends to make the practitioner observe more closely, diagnose more specifically, and consequently to prescribe more advantageously. After passing over the many pages of rich thought contained in this chapter, the reader arrives at Chapter III, which treats of "How to Examine the Patient," and contains much valuable practical information, which, if applied, makes a diagnosis positive, and a prognosis reasonably certain. Chapter IV. deals with the "Etiology" (general predisposing causes). This chapter causes the reader to think deeply, as he is brought to a realization of the physiological and anatomical predisposing causes of colic in the horse in the domestic state, and to marvel that colics are not even more frequent, and recovery from them less so. Etiology (general exciting causes) is dealt with in Chapter V, in which the matter of food, water, errors in the proper distribution of work, rest, watering and feeding, the influence of the time of the day on the production of colic, with tables of data are thoroughly discussed, is very interesting and instructive. Chapter VI is devoted to "Gastric Impaction" (gorged stomach, or stomach staggers; grass staggers), its causes, symptoms, diagnosis, prognosis and treatment. Chapter VII treats just as fully of "Gastric Tympany" (gastric torsion, or dilation of the stomach), giving formulæ in its treatment and reports of cases treated. The author's line of treatment, following upon his careful analysis of the conditions responsible for the ill, is convincing of its correctness. Chapter VIII takes up "Rupture of the Stomach," which is briefly and ably dealt with, when the author passes to "Subacute Obstruction of the Double Colon" (stoppage of the bowels), to which Chapter IX is devoted. This is an especially interesting chapter, bringing the practitioner face to face with conditions and symptoms which he is forced to cope with daily in his practice, and naturally making their discussion by an authority particularly fascinating. In this connection, the author introduces a treatment, based upon scientific reasoning, and borne out in practice, that holds the reader's interest, and convinces him of its correctness, more forcibly with each line and sentence ; making him feel that the little work is indispensable on account of that chapter alone. This chapter contains valuable formulæ in that portion of it devoted to "Posology"; following which is a re-

port of eighteen consecutive cases of "Subacute Obstructive Intestinal Colic." And in subsequent chapters the same careful consideration is given to "Subacute Obstruction of the Small Intestines," "Intestinal Irrigation in Obstruction of the Colon" (special apparatus being recommended and described for its accomplishment). The "Surgical Treatment of Intestinal Obstruction" is treated of in Chapter XIII, and, while its practical application may be somewhat difficult to imagine by the general practitioner, its description in this work is not a fancy picture; but is a description of the operation as performed by Professor Macqueen, of the Royal Veterinary College, at no more remote date than 1895, which demonstrates that it is safely within the bounds of possibility, should a case ever present itself where it would be considered advisable; and certainly this contribution makes the work complete. The author finishes the subject by a chapter on "Intestinal Tympany" (flatulent colic), "Tympanitis," "Enteritis," "Superpurgation," "Treatment of Colics in Young Unbroken Animals," and, finally, an Appendix, which is really a chapter on "Dietetics." The whole comprising an indispensable addition to every veterinarian's library.

ROBERT W. ELLIS.

THE GOVERNOR OF MICHIGAN has recently appointed Dr. Chas. Waldron, of Tecumseh, a member of the State Board of Veterinary Examiners. This now makes the entire board members of the State Veterinary Medical Association.

THE annual meeting of the Michigan State Veterinary Medical Association occurred at Lansing on Feb. 3 and 4, at which time an amendment was proposed to the present law, in an attempt to fully protect the qualified veterinary practitioner.

A MICHIGAN veterinary has contracted to relieve Country Jay, 2:10 $\frac{1}{2}$, trotting, of the effects of a bone spavin from which he has been lame for some time. Gus Macey, who has the gelding in charge, has deposited the money in the bank to be turned over when the cure is complete.—(*Breeder's Gazette*.)

MAN'S FAITHFUL FRIEND.—Through the efforts of a black-and-tan dog Lazarus Berger and his two-year-old grandchild, Bertha Vendig, were saved yesterday from being suffocated by gas in their home, at No. 19 Thatford Avenue, Brooklyn. One of the neighbors yesterday morning heard the dog barking as if trying to summon help. The door was broken in and the old man and the baby, unconscious from gas, were carried out.—(*N. Y. Herald*, Feb. 15.)

ARMY VETERINARY DEPARTMENT.

The REVIEW will, beginning with this number, maintain a department bearing the above caption, dedicated wholly to the interests of the veterinary service in the United States Army. The suggestion to establish this department is contained in the subjoined letter from Dr. Olof Schwarzkopf, of the 3d Cavalry, and we are convinced of its wisdom, and believe that it can be made one of great profit and interest to those most concerned. A reasonable number of pages will be at their disposal each month, and we cordially invite communications, items of news, and all matters tending to uplift and benefit the service.

FORT ASSINABOINE, MONTANA, February 13, 1903.

Editors American Veterinary Review :

DEAR SIRS:—Events in the Army, particularly the appearance of reports of army officers on "Glanders and Surra in the Philippine Islands," compel me to break my silence, and I hope will arouse the army veterinarians to action. While it can be acknowledged with satisfaction and thanks to those who are ruling over us that we are constantly improving, little by little, as regards our personal status in the Army, yet it must also be confessed that what we really should strive for—the efficiency of our professional work within the Army—remains more or less in a helpless, rudimentary shape. It is certainly becoming manifest, even to those who could not see it before, that we are unable to fulfil large and important parts of our professional mission in the Army from the new demands created by the foreign service, particularly so in suppressing the epidemics rampant among our Army horses there. One result is, that the subject is taken up for consideration by military officers, non-professional, non-expert men, whose tortures to pathology may not become apparent to their superior officers, but which are painful reading to us. If they would confine themselves to the consideration of the subject from a purely military standpoint, we all might learn from them. But they overstep the boundary set by common sense and draw the old, erroneous conclusion that army officers should learn more of veterinary science in order to cope with these diseases, and they tell us in the same breath that we (the veterinarians) are uneducated men, good enough, perhaps, for ordinary veterinary work, but not capable of dealing with the serious

problems of combating such diseases. No one of us can exempt himself from this charge, for the assertion is sweeping.

In the face of the facts as told by others than ourselves, we may acknowledge failure, but we have to come together to rescue our reputation. Let us show that the failure is not that of the individual, but that it springs from a faulty system, or rather from an entire lack of any system. Let us also come to know what we need and want to be efficient. Some army veterinarians have suggested that we form an association ; but, as we are scattered to the four winds, we could never meet in a body, and if only a few of us might meet, the rest might either remain indifferent or pull some other way, as was recently shown in so small a matter as the proposed change in the collar-device in our uniform.

That all in the Army might have a chance to say what they want to say, and an incentive to really say so without fear or half-heartedness, I ask you, Mr. Editor, to extend your hospitality and sympathy to the Army veterinary cause, as you have done for so many years past, and allow us every month a few pages under the heading :

ARMY VETERINARY DEPARTMENT,

wherein all of us could, and by duty should advance opinions and make suggestions. The question before us is not one of dollars and cents in raising our salary ; it is not the question of shoulder-straps ; in fact no question of personal aggrandizement. It is purely a question the solution of which we owe to our profession, to the Army and to our country.

I suggest that we prepare a memorial to be presented, in due time, to the Secretary of War or to the general-staff, setting forth the causes of the failure alluded to and its remedy. This is simple. It lies in the creation of an organic body that will perform its function, an organized veterinary service that will do its work. It cannot be a full-fledged veterinary corps, which has been shown to be so distasteful to the Army, but it ought to be a body whose members have a live connection, a body which has a head and guiding mind. As it is, we are a dismembered body without a soul.

However different the opinions may be among the army veterinarians of what we need and want, let us hear from all, old and new in the service. For we need different opinions and suggestions to come to some honorable compromise among ourselves, to some plan of action as nearly satisfactory to everybody as possible. If we have agreed on some tangible proposition,

some conservative measure that promises results, then the ultimate success cannot be far off, and the Army will reap its benefits.

OLOF SCHWARZKOPF,
3d U. S. Cavalry.

ARMY VETERINARY DEPARTMENT NOTES.

New Collar Device for Veterinarians.—Henry V. Allien & Co., 734 Broadway, New York City, is manufacturing the new collar device in accordance with instructions from the War Department. The prices are: (1) Gilt crossed sabres, with *sterling silver* veterinary device, per pair, \$2.25; (2) gilt crossed cannons with same device, \$2.50; (3) devices, alone, separate, \$1.00; (4) bronzed will be the same price as above.—(*O. S.*)

New Appointments in the Army.—On February 5, 1903, seven new veterinarians were appointed for the Army, four for the Cavalry and three for the Artillery. In spite of repeated examinations, there still remain fourteen vacancies. The result of the examination of the great majority of applicants is said to be very poor, and their personality undesirable for the military service.

List of Veterinarians in the Army.—We have in hand a carefully-prepared list of all the members of the Army veterinary service, with their assignments and addresses, but owing to the crowded condition of our pages it is held over until the April number.

"I CERTAINLY could not get along without the REVIEW, and I never fail to find within its covers something of good practical value."—(*Chester L. Blakely, M. D. V., Augusta, Maine.*)

THE CONNECTICUT V. M. ASSOCIATION elected four new members at its meeting last month, and voted to hold clinics at the next meeting. Its report elsewhere shows evidence of harmonious progress.

THE Christmas examinations of the Ontario Veterinary College, Toronto, Canada, were held Dec. 23d, and diplomas were granted to the following:—William G. Chrisman, Harrisburg, Va.; Peter Crerar, Russell, Man.; Fred J. Delaine, Emerson, Man.; Edward L. Fryer, Jr., Blakely, Georgia; Richard L. Kramlich, Fogelsville, Pa.; E. J. Murphy, Metcalfe, Ont.; H. Wynn Nobles, Hastings, Mich.; Matthew S. Suttle, Paterson, New Jersey; William Thompson, Minnedosa, Man.; John E. Wurm, Ubly, Mich.

OBITUARY.

PROFESSOR F. FRIEDBERGER.

On Dec. 17, 1902, one of the greatest teachers of veterinary science passed away. Prof. Dr. F. Friedberger was born in Munich in 1839, and graduated from the Bavarian Veterinary School in 1860. His literary and scientific achievements are known all over the civilized world, probably to American veterinarians chiefly through his excellent treatise on "The Pathology and Therapeutics of the Domestic Animals," which he collaborated with Prof. Fröhner, of Berlin. He was decorated and honored on many occasions, but, in spite of this, he ever remained the quiet scientist, self-sacrificing teacher and dear friend to all colleagues. Through great suffering from trigeminal neuralgia, he was forced to give up active life in 1892, and was not relieved from his torturous sufferings until released by death, which came finally after a stroke of paralysis.

OLIVER H. TIMMS, D. V. S., of New York City, died Jan. 6, from blood-poisoning induced from a very simple and trivial accident. He carried in his upper vest pocket a pair of curved scissors, with the points turned upwards. Withdrawing his hand rapidly from his face he caught his thumb between the open jaws of the scissors, which caused a wound. Paying but little attention to the injury it soon began to take on a septic condition, which terminated in his death in about ten days. He was a graduate of the American Veterinary College, class of 1887.

THE following changes have recently taken place in the Bureau of Animal Industry force at Kansas City: Drs. W. F. Jones and H. B. Chaney have been transferred to Denver, Colo. Dr. W. A. Hurst, of Ames, Ia., and Dr. W. L. Hiatt, of Wichita, Kans., have recently been appointed assistant inspectors. Dr. C. H. Jewell resigned February 1st, to accept an appointment in the 13th U. S. Cavalry. The doctor passed the military veterinary examination in December with a high grade, and his appointment is as a first-class veterinarian. The 13th Cavalry is scheduled to go to the Philippine Islands in the near future. Dr. W. J. Fretz has been transferred to the quarantine service, and is stationed at Rushville, Neb., in the special work of eradicating *maladie du coit*.

DISEASE RESEMBLING GLANDERS IN THE PHILIPPINES.

(From the Manila Times, Nov 3, 1902.)

Government experts in charge of the biological department of the Bureau of Government Laboratories have made the startling discovery that more than 50 per cent. of cases in livestock which have been treated as glanders, are not glanders at all, although the disease clinically resembles that ravaging infection. As a result of a long and thorough clinical and biological investigation of this strange malady, Dr. Paul C. Freer, superintendent of government laboratories, has transmitted to the Hon. Dean C. Worcester, Secretary of the Interior, a preliminary report of the appearance in the Philippines of this disease by Dr. Richard P. Strong, director of the biological laboratory.

Attention was first called to this malady by Dr. J. G. Slee, Veterinarian of the Philippine Board of Health, who sought aid from the laboratory in the diagnosis of the disease with which a number of horses were afflicted, and requested an examination of these animals for glanders.

That this malady sometimes closely resembles the cutaneous form of glanders may be evidenced from the fact that in the first case encountered a diagnosis of farcy had already been made by three veterinarians. Upon a microscopic study of material removed from the pseudo-farcinous buds, however, it has been possible to show that the disease is of an entirely different origin from glanders. The malady under consideration, it seems, is not due to bacterial infection at all, but to a parasite of an entirely different group.

Clinical Manifestations.

The disease starts as a small nodule situated in the cutis and frequently in the neighborhood of some slight abrasion. The primary node usually appears upon one of the extremities or in the cervical or abdominal region, but may be situated on the shoulders or chest. Frequently the adjacent lymphatics become swollen and arranged in a row, presenting somewhat the appearance of beads.

The hair is preserved over the younger tumors, which at first are hard, but usually soften later and form larger abscesses. If left to themselves, they generally finally open and leave ulcers with margins which are usually irregular. When the ab-

scesses are incised in their early stages they are found to contain a bloody, purulent, tenacious material. The contents of the older tumors are yellowish white, gelatinous, and very tenacious. When the cervical region is affected, the submaxillary glands are not uncommonly swollen, and the lymphatic glands near the other parts involved are usually enlarged, soft and freely movable. The disease extends gradually, and in neglected cases may spread over almost any part of the body, and even invade the nasal mucosa. A mucous discharge from the nose then appears, and the picture now more closely resembles glanders. We, however, have not yet seen the primary nodule situated in the nares. In the cases observed there seems to be no tendency for the process to invade the scrotum, testicles, or penis. Indeed, though there have been nodes very near these organs, there has so far been no involvement of them. In the fairly severe cases there may be some general disturbances, such as slight fever and loss of appetite. In the severe ones anaemia and cachexia appear in addition. The mild cases may run an almost afebrile course.

While glandular metastases occur, metastases in the internal organs have not as yet been observed. Occasionally sinuses form in the subcutaneous and deeper muscular tissues. The disease runs a chronic course and may last for months, but the prognosis is usually favorable, and a very large majority of the animals eventually recover. Cattle are sometimes affected with this malady, but it is not so common in these animals as in horses.

Differential Diagnosis.

The disease briefly reviewed above is not to be confused with that termed "bursattee" in India, or with that known as "farcin du boeuf," an affection of cattle which exists in the West Indian Islands, especially Guadeloupe. It is, however, probably very closely related to the variety of lymphangitis epizoótica, studied particularly by Fermi and Aruch, and to a similar infection described by Tokishige in Japan.

The diagnosis can usually be suspected and in many cases made in the following manner: A small amount of material from a freshly opened nodule should be transferred, preferably by an oese, to a glass slide and covered with a cover glass which is gently pressed down. On examination with a moderately high power (Zeiss DD, Oc 4) numerous glistening ovoid bodies with a double contour as described above may be seen in the field of vision. The diagnosis should be confirmed by cultures.

Treatment.

On the appearance of the first node the hair should be shaved for a considerable distance around it, the nodule opened early, curetted, cauterized, and thoroughly cleansed with some antiseptic solution, such as benzoyl-acetyl peroxide, bichloride of mercury, or creolin. Applications of formalin have also given good results. A 1-1,000 solution of benzoyl acetyl peroxide should be injected subcutaneously completely around the early tumor with the hope of limiting the extent of the disease. As each new node appears, it may be treated in like manner. The skin in the neighborhood of the tumors should be kept perfectly clean. It is advisable to thoroughly irrigate the open ulcers at least twice a day. In the interval some ointment, iodoform or sulphur, should be applied.

Veterinarians and owners of horses are advised before destroying animals suffering from supposed farcy to have microscopical examinations made from the nodules of the infected animals at the Government Biological Laboratory. It seems probable that a number of horses suffering with this disease have already been destroyed. As has been stated above, a large majority of the cases eventually recover, although the disease may persist for months.

CORRESPONDENCE.

HÆMORRHAGIC SEPTICÆMIA ON THE PACIFIC COAST.

SALEM, OREGON, Dec. 31, 1902.

Editors American Veterinary Review:

DEAR SIRS:—I believe we have had a few cases in the Willamette Valley of hæmorrhagic septicæmia; at least I am led to believe this the case, though I did not have opportunity to hold a post-mortem on them, but I am watching for a chance to do so if any more die having symptoms like these, and having symptoms resembling those given by M. H. Reynolds, M. D., V. M.

Very respectfully, D. D. KEELER.

EFFORTS are being made to secure enactment of legislation regulating veterinary practice in Nebraska and Missouri.

DR. W. L. BAKER, of Buffalo, N. Y., ex-President of the State V. M. Society, was in New York City the early part of February undergoing the anti-rabic treatment of the Board of Health on account of the bite of a dog supposed to be rabid.

REGISTERED VETERINARIANS OF MICHIGAN.

The following is a list of the registered practitioners of Michigan on record January 1, 1903.

- Ackerson, J. W., Manchester.
Attridge, F. H., Harbor Beach.
Armstrong, W. N., Concord.
Armstrong, Robt., Detroit.
Austin, Edmund, Romeo.
Augustin, M. A., Chesaning.
Adams, C. H., Carson City.
Adams, W. E., Carson City.
Buckingham, J. I., Ludington.
Brock, G. C., Smith Creek.
Brenburg, T. A., Niles.
Burdick, W. M., Chesaning.
Buckingham, T. H., Stockbridge.
Byers, Wm. J., Charlotte.
Black, Judson, Richmond.
Brach, Max W., Detroit.
Blatchford, F. M. Brighton.
Brown, Eugene, Lawrence.
Brodie, J. W., Pontiac.
Bellinger, H. L., Plainwell.
Breton, S., Detroit.
Baldwin, B. F., Rockford.
Conkey, L. L., Grand Rapids.
Coleman, R. S., Sparta.
Culp, J. J., Ionia.
Cornell, Aaron, Elkton.
Crevier, E. C., Detroit.
Curtis, D. W., Cadillac.
Carter, Geo. H., Saginaw.
Cornell, J. H., Vassar.
Clement, H. H., Hudson.
Cregan, H. T., Decatur.
Compton, A. L., Morrice.
Cumings, D., Port Huron.
Campbell, Andrew, Jackson.
Clark, C. H., Caledonia.
Cox, Wm., Mayville.
Cunninghton, J. H., Durand.
Deadman, A. W., Ishpeming.
Deadman, J. F., Sault Ste. Marie.
Douglas, J. A., Fairgrove.
De Woif, D. S., Hart.
Du Bois, West Branch.
Drury, Jas., Ypsilanti.
Duff, T. G., St. Louis.
Deadman, B. B., Alpena.
Duncan, Francis, Ithaca.
Dell, J. A., Ann Arbor.
Deadman, Austin, Fenton.
Dodge, J. M., Elmwood.
Dunphy, G. W., Coldwater.
Dean, A., Marshall.
Ellis, F. H., Worden.
Elgas, A., Hartford.
Elzinger, M. E., Grand Rapids.
Elliott, Wm., Hickory Corners.
Fichett, Geo., Pinnebog.
Gohn, H. M., St. Johns.
Grant, J. S., Portland.
Gebhardt, O. H., Cheboygan.
Grainger, M. R., Plymouth.
Goulding, F. L., Mt. Clemens.
Gilbank, F. G., Detroit.
Giffin, W. A., Detroit.
Grinnell, L. A., Grand Ledge.
Haynes, Wilford, Jackson.
Harrison, R., Bad Axe.
Hooker, John, New Baltimore.
Hunt, R. E., Alma.
Hare, Geo., Allegan.
Hovey, F. O. N., Marshall.
Hickox, H. L., Grand Rapids.
Heseltine, P., Flint.
Haynes, Henry, Jackson.
Hessey, C. E., Glenn.
Hisey, Dan, Saginaw.

- Hamilton, Wm. S., Chelsea.
 Hughson, Wm. J., Battle Creek.
 Harrison, Jas., Maple Rapids.
 Hawkins, J., Detroit.
 Irwin, Samuel, Battle Creek.
 Immel, A. A., Powers.
 Jones, C. L., Monroe.
 Johnson, B. O., Benton Harbor.
 Johnson, Wm. J., Paw Paw.
 Joy, J. J., Detroit.
 Jopling, Wm., Owosso.
 Kreiger, E. Z., Benton Harbor.
 Kelin, Geo. W., Detroit.
 Lathrop, W. E., Lyons.
 Law, Francis, Detroit.
 Lane, Theodore, Iosco.
 Morris, W. M., Cass City.
 Manning, C. L., Middleville.
 McQueen, E. D., Lowell.
 McKerracher, J., Bay City.
 McQueen, Wallace, Oxford.
 Muir, Robt., Grand Rapids.
 Menhewit, F. W., Ishpeming.
 Mann, W. A., Clio.
 McCall, A. E., Memphis.
 Mizer, S. M., Leslie.
 Moody, Geo. C., Mason.
 McDonald, R. W., Flint.
 McBeth, A. E., Battle Creek.
 McLean, W. A., Grand Rapids.
 Munger, W. W., Galesburg.
 Moody, A. H., Three Rivers.
 Newman, L. M., Boyne City.
 Nye, Chas., Coopersville.
 Nelson, M., Manistee.
 Newbury, M. P., Hanover.
 Nichols, A. Z., Pittsford.
 Olley, F. W., Union City.
 Pear, J. H., Saugatuck.
 Pomroy, T. P., Freeport.
 Patterson, E. E., Detroit.
 Powers, W. M., Benzonia.
 Paul, B. E., Dowagiac.
 Perkins, L. N., Addison.
 Palmer, H. F., Detroit.
 Rathbone, C. D., Sherwood.
 Russell, John, Elsie.
 Rollis, R. C., Lake Odessa.
 Rose, D. W., Muskegon.
 Rischel, E. I., Sturgis.
 Rooks, W. J., E. Holland.
 Rose, Wm., Grand Rapids.
 Rennick, G., Petoskey L.
 Small, Fred. L., Beulah.
 Steveson, G. H., Bay City.
 Scott, A. J., Traverse City.
 Springer, U. S., Grand Rapids.
 Seibert, W. D., Petoskey.
 Smith, A. H., Evart.
 Saigeon, E. M., Williamston.
 Smith, H. S., Albion.
 Steel, Frank N., Detroit.
 Stowe, C. W., Saginaw E. S.
 Shevalier, E. D., Escanaba.
 Schiepper, F. G., Sebewing.
 Scott, John A., Coldwater.
 Seller, D. E., Manistique.
 Smith, C. N., Otsego.
 Sutherland, D. G., Saginaw W.
 Sutherland, Geo. H., Merrill.
 Spiers, H. J., Jackson.
 Stevens, J. B., Yale.
 Thorburn, W. W., Lansing.
 Thomson, W. N., Pontiac.
 Van Blankensteyn, C. F., Adison.
 Vhay, John, Detroit.
 Van Sickle, S. W., Saginaw.
 Von Rosenburg, Lansing.
 Wiley, H. H., Sanilac Center.
 Wells, E. W., Grand Rapids.
 Walkington, J. J., Mt. Pleasant.
 Woolley, P. L., Lapeer.
 Walsh, E. J., Imlay City.
 Waddle, Geo., Hastings.

Waldo, D. M., Grand Ledge.	Warner, A. B., Portsmouth.
Weill, J. W., Flushing.	Ward, J. E., Perry.
Whitney, W. A., Big Rapids.	Whitney, J. C., Hillsdale.
Waterman, G. A., Agri. College.	Wilkinson, W. H., S. Lake Linden.
Wahn, H. C., Clairview.	Winegar, Amos, Howell.
Wells, F. C., Warren.	Waldron, C. A., Tecumseh.
Ward, James, Detroit.	Yonkerman, D. P., Kalamazoo.
Wootton, W. C., Grand Rapids.	

GREATER POWER TO THE SECRETARY OF AGRICULTURE.

The following is the full text of the new law passed by Congress and signed by the President conferring unlimited power upon the Secretary of Agriculture in dealing with contagious and infectious diseases of live stock. It overrides all State interference in the matter of foreign and interstate transportation of stock, and will place the Bureau of Animal Industry in absolute control where such outbreaks as foot-and-mouth disease occur, thus preventing such friction with State authorities as has recently retarded the stamping-out process in Massachusetts:

"An act to enable the Secretary of Agriculture to more effectually suppress and prevent the spread of contagious and infectious diseases of live stock, and for other purposes.

"Be it enacted by the Senate and House of Representatives of the United States in congress assembled, That in order to enable the Secretary of Agriculture to effectually suppress and extirpate contagious pleuro-pneumonia, foot-and-mouth disease, and other dangerous, contagious, infectious and communicable diseases in cattle and other live stock, and to prevent the spread of such diseases, the powers conferred on the Secretary of the Treasury by sections four and five of an act entitled 'An Act for the establishment of a Bureau of Animal Industry, to prevent the exportation of diseased cattle, and to provide means for the suppression of pleuro-pneumonia and other contagious diseases among domestic animals,' approved May 29, 1884 (23 U. S. 31), are hereby conferred on the Secretary of Agriculture, to be exercised exclusively by him. He is hereby authorized and directed, from time to time, to establish such rules and regulations concerning the exportation and transportation of live stock from

any place within the United States where he may have reason to believe such diseases may exist into and through any State or Territory, including the Indian Territory and into and through the District of Columbia and to foreign countries, as he may deem necessary, and all such rules and regulations shall have the force of the law. Whenever any inspector or assistant inspector of the Bureau of Animal Industry shall issue a certificate showing that such officer had inspected any cattle or other live stock which were about to be shipped, driven or transported from such locality to another, as above stated, and had found them free from Texas or splenetic fever infection, pleuro-pneumonia, foot-and-mouth disease, or any other infectious, contagious, or communicable disease, such animals so inspected and certified, may be shipped, driven or transported from such place into and through any State or Territory, including the Indian Territory and into and through the District of Columbia, or they may be exported from the United States without further inspection or the exaction of fees of any kind, except such as may at any time be ordered or exacted by the Secretary of Agriculture; and all such animals shall at all times be under the control and supervision of the Bureau of Animal Industry of the Agricultural Department for the purposes of such inspection.

"Sec. 2. That the Secretary of Agriculture shall have authority to make such regulations and take such measures as he may deem proper to prevent the introduction or dissemination of any contagious, infectious, or communicable disease of animals from a foreign country into the United States or from one State or Territory of the United States or the District of Columbia to another, and to seize, quarantine, and dispose of any hay, straw, forage or similar material, or any meats, hides, or other animal products coming from an infected foreign country to the United States, or from the State or Territory or the District of Columbia in transit to another State or Territory or the District of Columbia whenever in his judgment such action is advisable in order to guard against the introduction or spread of such contagion.

"Sec. 3. That any person, company, or corporation knowingly violating the provisions of this act or the orders or regulations made in pursuance thereof shall be guilty of a misdemeanor, and on conviction shall be punished by a fine of not less than one hundred dollars nor more than one thousand dollars, or by imprisonment not more than one year, or by both such fine and imprisonment."

SOCIETY MEETINGS.

IOWA STATE VETERINARY MEDICAL ASSOCIATION.

OFFICIAL REPORT OF THE PROCEEDINGS OF THE FIFTEENTH
ANNUAL MEETING HELD AT CEDAR RAPIDS, IOWA,
JAN. 14 AND 15, 1903.

JANUARY 14—FIRST DAY—MORNING SESSION.

The meeting was called to order at 10 A. M. in the rooms of the Commercial Club by the President, Dr. J. I. Gibson, Denison.

The Secretary announced the system of card registration instead of roll-call.

The address of welcome was made by Mayor C. D. Huston, of Cedar Rapids, as follows:

"Mr. Chairman and Gentlemen:

"I deem it an honor, as the chief executive of the Parlor City, to extend the official greeting to the members of the Iowa State Veterinary Medical Association. You are expected to have a good time—the only kind of time observed on convention days in this city when friends are to be entertained. You can go all the gaits if you choose and make a record. In other words, it is a free-for-all and none barred. And, after you have finished your labors and returned to your respective homes, it is our hope that it will be with pleasant recollections of our city and citizens.

"We have the biggest city marshal in the entire country and the most tender hearted, too. It has been said of him, and it might truthfully be said of some other of us city officials, that in his boyhood days he was so tender hearted that he never overloaded a 'saw horse,' so he makes a good humane officer as well as police official. You will be under his special care and protection during your stay, and, should any of your number become lost or strayed, just telephone the city marshal and you will be found—not fined.

"Every head of a family in our city is the possessor of a horse of some description—it may be a pacer, or a trotter, and if not one of those, it is sure to be a 'hobby' or a 'clothes horse.' But they are all interested in the veterinarians. Those who have but a clothes horse are just as much interested in you gentlemen as the owners of the fine steppers, because they rely upon some one of your number to inspect the milk and butter

fats that go into the home for use of the infants as well as the adults, and they look to you to have framed and enforced such laws as are necessary to prohibit the selling or offering for sale of any impure or adulterated foods.

"I heard a horse story once—the title rôle being played by a mule. An Englishman came to this country for a hunt, choosing Missouri as the base of operations, presumably for the reason that when he returned to London he could say to his friends, 'I am from Missouri—you will have to show me.' He had as his guide a citizen who had been born near Penobscot, Me., and who had served time in selling wooden hams and watering dried apples. The Yankee had trained a mule so that when he tickled it in the flank it would sit down. They started upon the hunt, and after traversing the road a short distance the guide touched the mule in the flank and it sat down. 'What's the matter with the mule?' inquired the Englishman. 'Nothing the matter with the mule,' was the reply, 'he's a setter; don't you see he is setting that rabbit,' as he pointed out bunny, who was scampering away. Passing along a little further the whip was applied to the flank of the mule and it again sat down. The Englishman espied a pheasant, bagged the game, and then opened negotiations for the purchase of so intelligent and valuable an animal. After much dickering the Englishman's fine saddle horse and trappings and one hundred dollars in coin of the realm were exchanged for the mule. Hunter and guide exchanged mounts and passed on. In a short time they came to a stream of water and the mule, lagging somewhat, was urged on by the use of the spur and he sat down. 'What's the matter with the mule, now?' roared the Englishman. 'Nothing, nothing at all,' responded the Yankee; 'he sets just as well for suckers as he does for game or birds.'

"Now, my friends, you may not know it, but it is a fact that you are just six miles from the healthiest city in the United States, according to the last census report, partly due no doubt to the vigilance of meat and milk inspectors, who are experienced and respected veterinarians. Marion is the capital of Linn County, and besides being noted as a health resort is also noted as being the home of several horse fanciers who are national characters. They will be over here to-morrow and with some of our own horse fanciers will exhibit a goodly number of beautiful coachers, park horses, single and double drivers, equal if not superior to any you have ever seen.

"I am requested by the directors of the Poultry Show, now

on at the Auditorium, to extend you an invitation to inspect the magnificent exhibit to be seen there, and no one can afford to miss it.

"The great cereal plant, which furnishes breakfast for the world, and the biggest institution of the kind in the world, is worth a visit, as is also the Sinclair packing plant. Besides numerous other industries, we have three of the largest pump factories in the West, which furnish our city wind and the population of the entire Northwest with pumps and pipe—and this is no pipe-dream either.

"Then our business men want to give you the glad hand and make your stay so pleasant that you will certainly desire to, if you do not actually vote, to make Cedar Rapids your permanent headquarters for all your State meetings."

Response to the address of welcome was made by Dr. J. I. Gibson.

PRESIDENT'S ADDRESS.

The President delivered his address as follows:

"*Mr. Vice-President, Officers and Members of the Iowa State Veterinary Medical Association :*

"I greet you at this fifteenth annual meeting and wish you all the compliments of the season.

"As each new year in the history of our Association is ushered in, it brings to us and our profession new obligations and greater responsibilities. We live in an age of wonderful progress. The world is rapidly growing brighter and better. New methods are constantly coming in vogue in all commercial and professional pursuits. We discard many of the best methods of our fathers as worthless or impracticable. In this double-quick onward march of twentieth century civilization I trust our profession may always be found occupying a position in the foremost ranks.

"*The Past and Present.*—It is amusing as well as instructive, to compare the conditions of fifty years ago with those of the present time. How ridiculous some of the methods of those times appear when viewed in the light of the present. Few, if any, of the live-stock owners of to-day would permit a veterinarian to apply the plank-and-sledge-hammer treatment to a case of 'lockjaw,' or the gimlet and turpentine to a case of 'hollow-horn,' or the knife and pepper and salt to a case of 'wolf in the tail,' or to introduce into the mouth of a ruminant a pork rind, or other artificial cud, to relieve the patient and reinstate the suspended process of rumination. And yet the

older citizens recall the time when the above mentioned methods were very generally practiced. Now-a-days the owner of live-stock requires of the veterinarian better medical and surgical treatment of his animals than the medical profession was qualified to practice upon his grandfather. The improved and finely bred animal of to-day requires much more humane and scientific treatment than did his coarser bred ancestors. The breeder of to-day possesses a much larger fund of knowledge concerning the principles of breeding and feeding than did his fathers.

" Veterinary medicine and surgery has made wonderful progress in the past fifty years. The medical profession has made, I might say, greater advancement in the past fifty years than our profession. It seems almost incredible, but it is nevertheless a fact, that asepsis and the use of antiseptics were neither known nor understood by the medical profession of fifty years ago. The army surgeons during the War of the Rebellion used a solution of potassium permanganate for the cleansing and healing of wounds, and found it an apparent aid to the healing process, but they did not know how or why it was. Some of them were particular to have and use clean instruments, from a natural tendency to cleanliness, whilst none of them knew or understood the necessity for or the theory of sterilization of hands, instruments and all appliances and surroundings, in order that good results might attend all their efforts in surgery. They looked upon suppuration and sloughing as indications of healthy progress in all wounds, but to-day, if suppuration follows surgical interference, it is at once positive evidence of septic infection or lack of sterilization, and is invariably charged to the negligence or carelessness of the operating surgeon or his assistants.

" Aseptic results may be, and frequently are attained at the present time in veterinary surgery, notwithstanding the fact that the surroundings favor the infection of all wounds in our patients, but fifty years ago such results were accidental in connection with human surgery, and entirely beyond the conception of human surgeon.

" The older surgeons of to-day tell us they distinctly remember how their professors warned them against entering the peritoneal cavity, with the assurance that it meant almost certain death to the patient, but these same surgeons have found it necessary scores and hundreds of times to ignore the teachings of their college days, and have in so doing saved many

lives that would certainly have been lost had they treated the patients as taught by the learned professors of but a generation past.

" In the field of sanitation and prevention of disease the advancement has been even greater than in the art of healing. When I was a boy the people feared smallpox, diphtheria and scarlet fever more than they now dread the so-called plagues—cholera, bubonic plague and yellow fever, and well they might, for in those days in the mildest outbreak of smallpox the death rate was about 25% as compared with 1% in recent outbreaks. In those days diphtheria very often proved fatal to whole families, while to-day 95% of diphtheria patients recover. In the treatment of these two diseases we have modern specifics, viz: vaccine and antitoxine. The thorough and systematic vaccination of a people, young and old, will in a few generations make that people immune to the virus of smallpox, and yet there are people abroad in our land who condemn and attempt to ignore vaccination. They are like the infidel born in a Christian land and reared by a godly mother.

" Vaccination belongs to the practice of our profession to as great an extent nowadays as it does to the medical profession. Through vaccination and inoculation with immunizing serums we protect the owners of live stock from greater losses than through all other lines of treatment and practice. We do not hesitate to assure the owner against losses from anthrax, black-leg, tetanus, Texas fever, malignant oedema, and through the good work now being done by Drs. Pearson and Gilliland, of Pennsylvania, we hope soon to be able to assure him against loss from the spread of tuberculosis. This anti-tuberculosis vaccination when perfected will prove the greatest blessing ever conferred upon the live-stock owners of the country, as well as a safeguard to human life. We wish these gentlemen final success in this great work for the protection of animal life and the preservation of the public health.

" We noticed recently the announcement by a French scientist of the discovery of an anti-whooping cough serum, which he asserts will reduce the course of the disease to a period of not longer than one week and prevent all spasms and paroxysms. This, if true, is one of the greatest blessings ever conferred upon mankind, especially infancy. When we stand aside and view the rapid progress made year after year we are led to believe that nothing that can be imagined is too difficult to be brought to pass.

"The Future of the Profession.—We might ask, 'What has the future in store for us and our profession in the State and nation?' I feel assured that the signs of the times indicate marked advances for the veterinary profession in the near future. The great increase in the production of pure-bred stock of all breeds in the country, in which Iowa leads all other States, means a proportionate increase in the demand for qualified veterinarians. The breeder of pure-bred stock requires more of his veterinarian than does the owner of common scrub animals. He not only requires that he shall be well qualified to administer the best medical aid and to perform the most scientific surgery, but, further, that he shall be qualified to instruct and to advise as to the best methods of breeding and feeding, and all other things pertaining to animal husbandry.

"With all the recent improvements in the courses taught in veterinary colleges I sometimes fear the veterinarians of to-day are not fully equipped to meet the demands now made upon them. It seems to me our colleges should take the initiative in the matter and at once establish thorough courses in animal husbandry and live stock judging. These branches properly belong to veterinary science and every veterinarian should be expert in them. The natural tendency on the part of the breeder and feeder is to go to his veterinarian for all advice and counsel pertaining to the best methods of breeding and feeding, and the veterinarian should be qualified to advise him in the way that will bring the best results. He should also be master of the science of breeding and able to select the proper sire and dam to produce the desired progeny.

"There is an increasing demand for this kind of veterinarians to superintend breeding farms throughout the country. How many of the veterinarians present are owners and breeders of pure-bred stock of any breed or species? Every one of you should own and breed some choice animals, and thus by practical example prove your fitness to advise others in breeding.

"The judging of live stock, which is naturally the work of the veterinarian, has been of late years in this country conceded to the professors of agriculture and animal husbandry and their graduates. Many of these men are indeed experts, but none of them have the advantages that accrue to the veterinarian in this work on account of his thorough knowledge of the formation and function of all parts of the animal. The veterinarian in all countries excepting the United States is recognized as the proper person to judge in the show ring, and is generally made chief

judge or referee at live-stock exhibitions. I for one am in favor of the judging clinics at our meetings, and a course in judging at all our colleges, and the final reinstatement of the veterinarian as judge in the show ring.

"Veterinary Sanitation."—I feel that I cannot emphasize too strongly the importance of veterinary sanitation; first, as it applies to the protection of the life and health of our domestic animals, and, secondly, on account of its effect upon human life and happiness. Just now we are confronted with a serious problem in the introduction within our borders of one of the cattle plagues of Europe, foot-and-mouth disease. If our fair State should become infected with this disease it would mean a loss of millions of dollars to our people. Why are we resting so peacefully under these circumstances? Because Uncle Sam's army of veterinary sanitarians under the command of that peerless general, Dr. D. E. Salmon, Chief of the Bureau of Animal Industry, has promptly met the foe and thrown its invincible lines around the enemy and is waging a war of sure and speedy extermination. For this reason we are not fearing the invasion of our State by the dread disease. As a result of organized veterinary sanitation in States and nation all contagious and infectious diseases of animals are on the decrease.

"The greatest problem in veterinary sanitation yet before the civilized world is the eradication of tuberculosis from our herds. It is well for our country that the determination to control tuberculosis has become so marked, before the disease gets the foothold here it has in European countries. The discovery of the anti-tuberculosis vaccine should prove the greatest aid to the control of the disease yet known. Its use will protect all additions to an infected herd by birth or purchase, and make the final purification of the herd much easier than any other method suggested. If it proves a success the names of Pearson and Gil-liland, its first advocates, will be immortalized in history.

"In conclusion, I wish to congratulate the members present on the high position this Association occupies in the list of State Associations, and especially on the election of our Secretary at the Minneapolis meeting to the position of Secretary of the American Veterinary Medical Association, which gives this Association additional prestige in the national and international affairs of the profession.

"I request of each of you a renewed spirit of loyalty to our Association and all its interests, and wish you all health, happiness and success throughout all future years."

The Secretary then read his annual report, covering the principal points of interest to the Association, as follows:

SECRETARY'S REPORT.

"*Mr. President and Members* :—There has been encouraging progress in Association affairs since our last meeting.

"Correspondence with the members indicates a commendable interest in the welfare of our organization, and in the profession as a whole. The members have been prompt in responding to requests for assistance in getting up a programme, and in otherwise preparing for the meeting. A hopeful feeling has been generated by the prosperous state of veterinary practice, and attention to business has, fortunately, not led to such narrow and selfish views on the part of the members as would cause them to neglect or shoulder upon others the broad interest of the profession at large, the interests of which can be cared for only by such an organization as ours. It is evident to me that our members are almost without exception thoroughly awake to the great benefits which they may derive personally from their membership and to those which are bestowed upon the profession at large through the influence of our State Association.

"The work of the Secretary is considerable in amount and exacting in character, but I have been much gratified by seeing on every hand a reward in the form of good results from labor bestowed.

"We now have an active membership of 74. Only 5 of these have allowed themselves to fall into arrears in dues beyond the limit set by the by-laws. The remainder have manifested their interest in the affairs of the Association by ready payment of dues. Collections have as a rule been very satisfactory. Inasmuch as the annual dues are so small, and as it is manifest that the Association requires all the money it can raise through legitimate means for its operation, it is cause for wonder that members should allow themselves to fall into arrears so far as to make them subject to suspension. If a member has not been able to sustain his interest in the Association, the logical and proper thing for him to do would be to submit his resignation and thus free himself from all obligation. Those who are in arrears have been notified three times within the last six months, and the consequence of continued delinquency has been detailed to them. There is nothing left for me to do but advise that they be suspended from membership for non-payment of dues.

"I would call attention to the fact that it is the policy of the Association to put upon the list of honorary members not subject to dues, any members who may remove from the State, or who may go into some other honorable profession or business, provided they are in good standing at the time of cessation of active membership and their dues are paid up. It is very much desired that members thus making a change will keep the Secretary informed in regard to it, so that the Association may take appropriate action.

"At the last meeting of the Association 36 members were suspended for non-payment of dues. These delinquents had been accumulated during a period of ten years, and it was thought the interests of the Association demanded that such action should be taken. The Secretary was directed to send a letter to each one of these, apprising him of the action taken, and enclosing a statement of account. This was done at two different times in case of 23, whose whereabouts could be ascertained. The remainder either had died or their addresses had been lost. One of the 23 has since died, and of the remaining 22 one has paid up his arrears and asked for reinstatement to active membership. A few others sent replies which will be referred to at another time. Of 39 others who had been suspended for non-payment of dues during the previous history of the Association, 17 were still alive and their addresses were obtainable. A letter and statement of dues was sent to each of these on two different occasions. One responded by paying up arrears and asking for reinstatement. Two others showed their interest by making replies which will be referred to later. It is well nigh impossible to get any sort of reply from more than a few of those suspended members, much as it is desired. Unless some action which they may view with more favor is taken by the Association, I think it would be justifiable to discontinue efforts to bring them again into relations with the Association.

"To every veterinarian in active practice in the State who is not a member, but eligible to membership, I sent a letter asking him to submit his application. Up to this time 17 have responded and others are expected to do so during this meeting. This is very encouraging. But still there are about sixty veterinarians in the State who ought to join with us in active membership. It is the duty of every member to see that this result is accomplished, and I hope that a long stride may be taken in this direction during the coming year. I wish all would realize how easy it would be for us to have in Iowa a veterinary Asso-

ciation which had developed all the strength which the union of all the veterinarians in the State into such organization would give. Time and space will not allow me to go into detail, as I should like, on this subject, but let us all strive to reach the ideal in regard to membership to which I have just referred.

"In the interest of the veterinarians of the State, I took up the matter of subscriptions to the veterinary journals. By consulting the subscription lists I found that there were only 68 subscribers in Iowa to one or both of the American veterinary journals. Out of these 68, 22 are non-graduates. In other words, 33% of the 68 subscribers are non-graduates. This, it must be confessed, is very complimentary to the non-graduates, but not very flattering to the graduates. This left 94 graduates in the State who were not subscribers. A large percentage of these are members of this Association. To each of these an offer of a special subscription price was sent. I am much pleased to say that up to this time 9 have taken advantage of this offer, and 3 of these become subscribers to both journals. It is hoped that many more will avail themselves of this offer before it is withdrawn, Jan. 16th. Still, I fear that very, very much will be left to be desired. I should state that one veterinarian wrote me that he is receiving a journal in another's name, and another that he was getting an issue monthly through a newsdealer. I am glad to be able to report that no members have died since our last meeting.

"Whether speaking for myself or for my successor, I would request that each member write the Secretary at least one letter each year. Respectfully submitted,

"JOHN J. REPP, *Secretary.*"

The Treasurer submitted the following report:

TREASURER'S REPORT.

FIFTEENTH ANNUAL MEETING, Jan. 14, 1903.

Receipts.

Cash on hand Feb. 10, 1902,	\$ 66.30
Cash for Dues Feb. 11, 1902, to Jan. 12, 1903, incl., .	62.00
Cash for Membership Fees Feb. 11, 1902, to Jan. 12, 1903, incl.,	42.00
	—————
	\$170.30

Disbursements.

Cash Refund of Membership Fee to W. L. Evers, . . .	\$ 2.00
Cash to H. E. Talbot a/c Clinic 14th An. Meeting, . .	10.00
Cash Refund of Membership Fee to J. V. Jewell . . .	2.00
Cash " " " " to T. D. Hulme,	2.00
Cash Secretary's Allowance,	25.00

Cash to Secretary for Editing and Typewriting Proceedings 14th An. Meeting,	20.00
Cash to J. Miller for Postage,53
Cash for 9 Registered Letters,72
Cash for Letter Copy Book,	1.50
Cash for Letter Copy Book,	1.50
Cash Badges and Express on Same,	9.25
Cash for Express,	1.20
Cash for Stamps,	18.75
Cash for Printing and Stationery to Ames Times,	22.25
Cash for " " " Hodson Bros.,	5.50
Total,	\$122.20

Balance in Treasurer's Hands Jan. 12, 1903, \$48.10

Respectfully submitted, JOHN J. REPP, *Treasurer.*

The following committee was appointed to audit the Treasurer's accounts: J. Miller, J. S. Potter and Hal C. Simpson, which made the following report:

"We, the Auditing Committee for the Fifteenth Annual Meeting of the Iowa State Veterinary Medical Association, hereby certify that we have examined the above account of the Treasurer, and that we find it correct.

" HAL. C. SIMPSON
" J. S. POTTER }
" J. MILLER } *Auditing Committee.*"

By vote of the Association, the report was accepted.

The President appointed A. A. Adamson a member of the Board of Censors, in place of W. H. Austin, who was absent.

The Board of Censors reported favorably upon the following applicants for membership: Robert J. W. Briggs, Garner; F. H. Thompson, Des Moines; F. R. Alilers, Lamotte; C. O. Van Winkle, Salem; A. F. Baldwin, Des Moines; C. J. Heckard, Wheatland; Gustave A. Kay, Avoca; Walter A. Stuhr, Ames; A. L. Wood, Hampton; O. R. Moyer, Cedar Rapids; Fred N. Elwell, Bancroft; Seth P. Talbot, Oskaloosa; C. A. Bradley, Marion; J. L. Brodie, Cedar Rapids; D. Barrett, Cascade; L. L. Diller, Grundy Centre; G. W. Blanche, Belle Plaine; J. E. Frank, Sandyville.

Report of Board of Censors was received by vote.

On motion, the rules were suspended and the Secretary instructed to cast the ballot of the Association for those whose names were read. This was done, and the President declared them duly elected.

The Board of Censors reported favorably upon the following for reinstatement to active membership: J. W. Scott, Man-

chester; J. E. Harrison, Burlington; J. G. Parslow, Shenandoah.

The report of the Board of Censors was received by vote.

On motion the rules were suspended and the Secretary instructed to cast the ballot of the Association for those whose names were read. This was done and the President declared them duly reinstated.

Dr. T. A. Shipley, Inspector Bureau of Animal Industry, invited the members to visit the Sinclair Packing Plant between 1 and 2 P. M.

Mr. Thos. H. Simmons, Sec. Commercial Club, invited the members to attend the Poultry Show, admission to be secured by the badges.

Adjournment for lunch 12 M. to meet 2 P. M.

JANUARY 14—FIRST DAY—AFTERNOON SESSION.

Meeting called to order 2.30 P. M. by President Gibson.

The Committee on Disease and Treatment reported as follows :

REPORT OF COMMITTEE ON DISEASE AND TREATMENT.

"Your committee beg leave to report briefly. We have nothing new or startling to offer, but only a review and a few minor suggestions, and hope our effort may be the means of bringing out a good discussion if nothing more. Throughout our State domestic animals have enjoyed particularly good health. There has been no general epizoötic. Many localities have been visited by local diseases of different kinds, but they were soon brought under control. Probably we have had more ergotism than for several years past, owing to the excessive moisture, rank growth, and lack of sunshine. Almost every pasture was more or less affected, especially was the ergot abundant on the blue grass, red top and similar grasses.

"There was a great deal of enzoötic ophthalmia among cattle, especially in the southern part of the State. The loss to stockmen comes principally from shrinkage of animals affected. Treatment is impracticable, especially in large herds.

"Rabies has been quite common during the year just closed. We are of the opinion that if farmers would enforce the trespass law throughout the State and prohibit hunting on their farms and in the public highways, the different breeds of hounds and hunting dogs would soon diminish. Then, instead of the general 50c. tax, put on a tax so high that only the very best dogs would be worth keeping, and as a result we would soon have

the periodical attacks of rabies reduced to a minimum. This means of handling rabies would be beneficial to the sheep interests of the State.

"There seems to be very little trouble in feeding cornstalks this year. Why is this? Is it due to the rank growth of the stalks, the excessive moisture, the large amount of grasses along fences and ravines and abundance of water in every ditch?

"There has been considerable sheep scab in the sheep-raising districts, but sheep owners do not talk much of this disease when they get it. Almost every farmer who owns a flock worthy the name is prepared to handle this disease, as he has convenient dipping tanks, while any of the Government dips will eradicate the trouble if directions are followed.

"We have had the privilege of examining several flocks of sheep which were shipped in, that developed scab of the worst form after being inspected and dipped at the dipping stations on entering the State, and know of many more where no veterinarian was called. The best plan is to advise feeders to buy natives, even at a little higher price, as their profits would be more in the end and more satisfactory.

"Tuberculosis is a disease that probably none of us will ever see blotted out of our State. Our interstate laws and regulations seem to be insufficient to cope with this or sheep scab, as the outbreaks seem to be more frequent where either cattle or sheep are imported into the State from the ranges. Perhaps the Bang method is the only practicable method of combating this disease without entailing too great a hardship on the stock owners.

"Hog cholera is prevalent in a few sections, but not nearly as much so as in former years of bumper corn crops. There are large areas in Southern Iowa and Missouri where land has been farmed for over sixty years and hogs have been raised almost continuously, where they have never had hog cholera or swine plague. Is it due to mineral deposits, the water, or the blue grass pasture and mast in their pastures? If not, why? Speaking of radical cures for a stock evil, a very successful sheep-breeder remarked to us once that the only way to make a success of the sheep business was to buy the best long range gun possible, load shells heavily with buck-shot, shoot so there will be no report or howl, only that of the gun, and keep your mouth shut."

The report was fully discussed.

The Judiciary Committee made the following report:

REPORT OF THE JUDICIARY COMMITTEE.

"We, the Judiciary Committee of the I. S. V. M. A., after careful inquiry, find that Dr. S. H. Johnston, of Carroll, Iowa, a member of this Association, has been guilty of non-professional conduct in that he has assisted in instituting and promoting a correspondence school of veterinary science for the expressed purpose of teaching veterinary science to farmers, breeders and non-graduate veterinary practitioners. We, therefore, recommend that he be expelled from membership in the Iowa State Veterinary Medical Association.

"Signed, J. I. GIBSON,
 " J. R. SANDERS,
 " P. MALCOLM,
 " WM. DRINKWATER,
 " JOHN J. REPP."

The report was adopted. On motion Dr. S. H. Johnston was expelled from membership in the Association by a unanimous rising vote.

New business was then taken up.

The resignations of T. A. Bown, Chariton, M. Y. Schaffer, Des Moines, were accepted.

On motion it was voted to receive applications for reinstatement to membership from all those suspended for non-payment of dues, provided they pay the sum which they were in arrears at the time when they were made subject to suspension according to Article IV of the By-laws.

Dr. Bauman reported the following cases: "Rupture of Rectum and Vagina in a Mare During Parturition—Successful Treatment," and "Obstruction of Bowels in a Horse Due to Abscess in Lumbo-sacral Region."

Adjournment was taken at 6.30 P. M. to 7.30 P. M.

JANUARY 14—FIRST DAY—EVENING SESSION.

The meeting was called to order at 8 P. M. by Pres. Gibson.

Dr. S. H. Bauman presented a paper entitled "Observations on Country Practice."*

Dr. J. W. Scott presented a report of a case entitled "Embolism of the Pulmonary Artery in the Horse."**

Dr. Sanders read a report of "Three Anomalies Met with in Castration."**

* Will be published in an early number of the REVIEW.

Dr. Drinkwater read a report of "Fracture of the Ribs in a Horse."*

Dr. Brodie read a report upon "Five Cases of Azoturia."**

Dr. Malcolm made an extemporaneous report of an "Autopsy on a Calf."

Dr. McLeod read the following reports:

"The Use of Antistreptococcus Serum in Purpura Hæmorrhagica,"* and "Results of Four Operations for Cribbing."**

JANUARY 15—SECOND DAY—FORENOON SESSION.

CLINIC AND JUDGING.

The clinic was under the supervision of Dr. J. W. Griffith, assisted by Dr. T. A. Shipley and Dr. O. R. Moyer. The following operations were performed: Castration of Cryptorchid, G. A. Scott, Independence; Stringhalt, F. F. Parker, Oska-loosa; Cribber, J. H. McLeod, Charles City; Oöphorectomy on Bitch, J. H. Potter, Iowa City; Trephining for Removal of Tooth, J. W. Scott, Manchester; Canker of Foot, E. A. Buxton, Vinton; Oöphorectomy on Bitch, W. A. Heck, Maquoketa; Castration of Cryptorchid, C. E. Stewart, Chariton; Oöphorectomy on Bitch, J. H. McLeod, Charles City.

Dr. G. A. Johnson gave a demonstration in connection with some pathological specimens collected at the Sinclair Packing Plant by Dr. T. A. Shipley. The specimens were as follows: Tuberculosis of liver of ox, multiple abscess of liver of ox, cryptorchid testicles from swine, parenchymatous mastitis of cow, cystic ovaries from sows, generalized tuberculosis of hog, cholera of hog, fibroma of larynx of cow.

An exercise in horse judging arranged by the local committee, took place between 11 and 1 o'clock. Five classes were exhibited. The members first judged the horses and each selected what he considered the best. Then a committee, consisting of J. I. Gibson, P. O. Koto and H. E. Talbot, made the final decisions. The following were the winners in the respective classes:

Draft Team: 1st, Standard Oil Co.; 2d, J. H. Stein Transfer Co. Carriage Team for Action: 1st, W. A. Dobson; 2d, H. R. Shafer. Carriage Team for Conformation: 1st, W. A. Dobson; 2d, H. R. Shafer. Single Driver for Action: 1st, W. A. Dobson; 2d, H. R. Shafer. Single Driver for Conformation: 1st, W. A. Dobson; 2d, H. R. Shafer.

The exhibitors are dealers in high class horses, and the

* Will be published in an early number of the REVIEW.

members had the opportunity of studying some of the best horses to be found in America.

Dr. J. W. Griffith is to be congratulated upon his success in getting the clinic started at 8 A. M., and in having both clinic and judging completed by 1 P. M.

JAN. 15—SECOND DAY—AFTERNOON SESSION.

The meeting was called to order at 2 P. M. by Pres. Gibson.

J. W. Scott was appointed a member of the Committee on Resolutions to take the place of C. A. Clinton, who was absent.

Dr. Adamson read a paper entitled "Compressed Air in the Treatment of Fistulas and Ulcers."*

Dr. J. Miller read a paper entitled "Gastroenterotomy, with Report of a Case."*

Dr. G. L. Buffington read a paper entitled "Ulcerative Enteritis in the Horse."*

Dr. W. A. Heck read a report upon "Three Cases Showing the Use of Oil of Turpentine in the Treatment of Atrophy of the Shoulder Muscles."*

Dr. T. A. Shipley made the report of the Committee on Sanitation as follows :

REPORT OF COMMITTEE ON SANITATION.

"*Mr. President* :—Your Committee on Sanitation, or rather its Chairman, after vain appeals to the other members of the committee and other members of the profession in the State for help, desires to submit its last year's report to be read by title at this time.

"Our reason for so doing is partly because it seems as applicable to conditions to-day as it did one year ago. Not that there has not been any good and honest sanitary work done by veterinarians, but what has been done has evidently been done along the quiet avenues of education rather than the more conspicuous and bustling ones of legislation, and this work can probably be best brought out by a sort of old-time experience meeting, in which each member here may give briefly his knowledge of local conditions and his efforts to right them and his success or failure and the reasons he assigns for such successes or failures. Each is equally valuable as a criterion for future action. And for this reason, also, we wish to cut the report short so as to give what extra time there may be for this discussion.

* Will be published in an early number of the REVIEW.

" But we want to again urge on you the especial need of local meat and milk inspection in cities of 10,000 and upwards, for, despite the large amount of federal-inspected meat sold in all the markets, the cities of this size naturally become the dumping ground of all undesirable animal carcasses and products that would obviously not pass our federal inspectors, and because butchers and scalpers in smaller places do not have the opportunity to get this class of stuff on the markets without the publicity which would kill their nefarious traffic. But in places of 10,000 and upwards there can always be found some who are willing and able to handle questionable goods without being found out in a way that they can be brought legally to task for their transgressions, or that publicity given their operations which would effectually check them. The only real solution of this problem seems to be for cities of this size to have local city inspection at a public abattoir and a system of insurance for clinically sound animals, for it is, of course, tuberculosis in this class of animals that would cause the heaviest losses, and they should not be altogether borne by the slaughterer, but, wherever possible, the loss should be made to revert to the original producer. It is this problem that we desire to emphasize and have discussed, because we believe it will lead to the detection of centres of this and other maladies, and will do much to educate the people to view the work of the sanitarian as a help to their progress rather than as a hindrance.

" The State Veterinarian, the executive sanitary officer of the State, reports an abundance of routine work with no very serious menace to live-stock interests such as has gained a temporary foothold in the New England States. But even such outbreaks tend to emphasize the importance of the sanitarian and will perhaps lead to better results than were anticipated.

" Another important point which we wish to emphasize at this time is the care the veterinarian should exercise in examining dirty-nosed horses and the importance of educating horse-owners to the dangers from glandered horses. Recent veterinary literature has chronicled the death of two brothers in an adjoining State from this malady after having been treated by their family physicians for smallpox, and the infection of a woman physician who made the bacteriological investigation in the foregoing cases. If science would reveal to us a germ, as virulent a germ as this one, with which we could inoculate the general apathy on sanitary matters, the problem would be

solved. The latent enthusiasm thus brought into play could not be checked in its good work.

"Respectfully submitted, T. A. SHIPLEY, *Chairman.*"

The Board of Censors reported favorably upon the following applications for membership: Carl W. Gay, Ames; W. E. Miller, Cherokee; Ralph F. Graham, Colfax; and C. G. Martin, Des Moines. On motion, the rules were suspended and the Secretary instructed to cast the ballot of the Association for those whose names had been read. This was done and they were declared duly elected.

Dr. Louis A. Klein, Fort Worth, Texas, was elected to honorary membership.

By vote of the Association the following members were suspended for non-payment of dues: J. J. Moore, Lamoni; H. Shipley, Sheldon; R. C. Sayers, Fairfield; J. O. Simcocke, Davenport.

On motion, \$10 was appropriated to J. W. Griffith to defray expense of clinic.

On motion, \$20 was voted to the Secretary for editing, type-writing and having printed the proceedings of the meeting.

The Committee on Resolutions reported as follows:

REPORT OF COMMITTEE ON RESOLUTIONS.

"*Mr. President and Members:*—Your Committee on Resolutions beg leave to report as follows:

"WHEREAS, It has been the experience of all institutions of learning, that in order to accomplish the best results it has been necessary that each division should have at its head a man highly qualified in the knowledge of that particular branch of science;

"WHEREAS, The Deanship of the Veterinary Division of the Iowa State College remains vacant, Be it

"Resolved, That we, the members of the Iowa State Veterinary Medical Association, in annual session assembled, would respectfully request that the Board of Trustees of that institution place a veterinarian in the position of Dean of the Veterinary Division of that college at an early date.

"Resolved, That we, the Iowa State Veterinary Medical Association, learn with much pride and approbation the good results already obtained by Drs. Pearson and Gilliland, of Pennsylvania, in their researches upon the subject of vaccination of cattle against tuberculosis, and, be it further

"Resolved, That we offer them our encouragement in the at-

tempts they are now making to render their method of vaccination practical for use in the herds of our country.

"Resolved, That we, the Iowa State Veterinary Medical Association, express our strong disapproval of correspondence schools of veterinary science whose purpose it is to give instruction in veterinary science to farmers, breeders, non-graduate veterinary practitioners and others who are not graduate veterinarians, and be it further

"Resolved, That we also express our strong disapproval of the instruction of non-graduates in any other than the regular under-graduate course in any veterinary college.

"Resolved, That we endorse the holding of a clinic at each annual meeting and that live-stock judging be conducted as a school of instruction in the science of judging at each annual meeting, and that the committee on clinics be hereby authorized to furnish suitable score-card blanks for the use of the members in recording their judgment with reasons therefor.

"Resolved, That we extend our thanks to the local committee, consisting of Drs. J. W. Griffith, T. A. Shipley and O. R. Moyer, for the courteous entertainment and excellent clinic furnished by them.

"Resolved, That we tender our thanks to the citizens, and especially to the city officials, of Cedar Rapids for their kind hospitality.

"Resolved, That we tender our thanks to the Commercial Club of Cedar Rapids for having placed a convention hall free of charge at our disposal.

G. A. JOHNSON,
"F. J. NEIMAN,
"J. W. SCOTT."

The report was adopted by vote.

Dr. J. H. McLeod offered the following resolution :

"Resolved, That we, the Iowa State Veterinary Medical Association, offer a special vote of thanks to the management of the Grand Hotel of Cedar Rapids for the uniformly courteous and satisfactory treatment which they have accorded to our members throughout our sessions."

Adopted by vote.

A volunteer paper was read by Dr. J. W. Scott, entitled "Principles of Heredity."*

The following officers were elected for the ensuing year :
President—T. A. Shipley, Cedar Rapids.

* Will be published in an early number of the REVIEW.

First Vice-President—C. E. Stewart, Chariton.

Second Vice-President—F. J. Neiman, Marshalltown.

Secretary and Treasurer—John J. Repp, Ames.

Board of Censors—P. Malcolm, New Hampton; J. H. McLeod, Charles City; H. C. Simpson, Denison.

Absolute harmony prevailed in the election. There were no opposing candidates for any office, and in each case the rules were suspended by motion, and either the President or the Secretary instructed to cast the ballot of the Association.

On vote of the Association, the resignation of G. A. Johnson from membership was accepted.

The following special resolution was adopted:

"Resolved, That it is the sense of the Iowa State Veterinary Medical Association that each member personally investigate the method by which each non-graduate veterinary practitioner obtained his certificate of registration, including the question as to whether his vouchers were reputable stock-owners and free-holders; also that each member prosecute any who are now practicing veterinary medicine, surgery or dentistry in Iowa without proper registration with the Board of Veterinary Examiners."

Dr. Simpson moved that the Committee on Disease and Treatment be instructed to investigate azoturia during the coming year, and report upon it at the sixteenth annual meeting.

Motion adopted by vote.

On motion, the Association adjourned to convene in Sixteenth Annual Meeting at Des Moines, at the call of the President and Secretary.

The following members were in attendance: A. A. Adamson, Newton; S. H. Bauiman, Birmingham; G. W. Blanche, Belle Plaine; C. A. Bradley, Marion; A. S. Brodie, Cedar Falls; J. L. Brodie, Cedar Rapids; G. L. Buffington, Baxter; E. A. Buxton, Vinton; Wm. Drinkwater, Monticello; F. H. P. Edwards, Iowa City; J. I. Gibson, Denison; Ralph F. Graham, Colfax; J. W. Griffith, Cedar Rapids; J. E. Harrison, Burlington; S. K. Hazlet, Oelwein; W. A. Heck, Maquoketa; C. J. Heckard, Wheatland; G. A. Johnson, Sioux City; G. A. Kay, Avoca; G. S. Kerr, Washington; S. H. Kingery, Creston; P. O. Koto, Forest City; J. H. McLeod, Charles City; J. H. McNeall, Ames; P. Malcolm, New Hampton; C. G. Martin, Des Moines; J. Miller, Ottumwa; W. E. Miller, Cherokee; O. R. Moyer, Cedar Rapids; F. J. Neiman, Marshalltown; F.

F. Parker, Oskaloosa ; J. S. Potter, Iowa City ; John J. Repp, Ames ; James E. Robertson, Monona ; J. R. Sanders, Corydon ; Geo. A. Scott, Independence ; J. W. Scott, Manchester ; T. A. Shipley, Cedar Rapids ; Hal C. Simpson, Denison ; C. E. Stewart, Chariton ; H. E. Stewart, Lacona ; H. E. Talbot, Des Moines ; Geo. M. Walrod, Storm Lake. (Total, 43.)

The following visitors were in attendance :

Visitors.—Peter Boyd, Cedar Rapids ; Wm. Bryant, Marion ; C. Carney, City Board of Health, Cedar Rapids ; Chief Cook, Fire Dept., Cedar Rapids ; Zan Cotter, Chicago, Ill. ; D. Cushman, Alderman, Cedar Rapids ; W. A. Dobson, Marion ; J. C. Douns, Vinton ; Dr. W. L. Evers, Iowa Falls ; W. Garretson, White Lake, S. D. ; C. Ham, Solon ; W. N. Hake, Vinton ; James Hughes, Alderman, Cedar Rapids ; Chas. D. Huston, Mayor, Cedar Rapids ; C. B. Hamilton, Cedar Rapids ; Dr. Lawler, City Physician, Cedar Rapids ; John Limbach, City Board of Health, Cedar Rapids ; Dr. R. Mollance, Reinbeck ; Mrs. John J. Repp and two sons, Ames ; J. Robertson, Norway ; C. R. Riley, Cedar Rapids ; Thos. H. Simmons, Secretary Commercial Club, Cedar Rapids ; L. J. Strong, Iowa City. (Total, 25.)

Respectfully submitted,

JOHN J. REPP, *Secretary.*

OHIO STATE VETERINARY MEDICAL ASSOCIATION.

This association convened for its twentieth annual session in Townshend Hall, Ohio State University, Columbus, on Jan. 13, 1903. The meeting was called to order by President Dr. F. E. Anderson at 2.20 P. M., and the Rev. W. O. Thompson, President of the Ohio State University, was introduced, and delivered a right royal and cordial address of welcome, as well as expressing his pleasure at the pleasant relations existing between the Veterinary Department of the Ohio University and the State Veterinary Association.

This address was briefly responded to, in behalf of the Association, by Dr. F. E. Anderson, as follows :

“*Prof. Thompson and Gentlemen :*

“On behalf of the Ohio State Veterinary Medical Association, I thank the honorable gentlemen for the cordial words of welcome to which we have just listened. Coming as they do from the head of this great educational institution, it proves that the scope of our profession is widening year by year, and we are coming into closer relationship with the other professions

and the general public on many questions of national as well as local importance.

"For a number of years previous to last year, our meetings were held in different halls and hotels in this city with varied satisfaction. At our last meeting we were accorded such a hearty welcome by this, our State University, and our meeting was so universally satisfactory, that we were not long in deciding where to hold *this* meeting when the invitation was extended to us.

"I thank you again, gentlemen, and I think I am voicing the sentiments of every member of this Association when I say this is the most appropriate place possible for us to meet, and only hope that our organization shall continue to merit the present friendly hospitality of this institution."

Roll-call showed the following *Members* to be present : F. E. Anderson, Findlay ; J. H. Blattenburg, Lima ; O. V. Brumley, Columbus ; H. W. Brown, Columbus ; L. W. Carl, Columbus ; W. R. Clark, Wauseon ; G. W. Cliffe, Upper Sandusky ; W. E. Clemons, Granville ; E. H. Callender, Zanesville ; Louis P. Cook, Cincinnati ; P. A. Dillahunt, Springfield ; Roy E. Davis, Toledo ; G. W. Emery, Greenfield ; Paul Fischer, Columbus ; H. Fulstow, Norwalk ; J. D. Fair, Berlin ; Wm. H. Gribble, Washington C. H.; F. Griffin, Columbus ; T. B. Hillock, Columbus ; R. C. Hill, West Alexandria ; W. R. Howe, Dayton ; N. W. Hillock, Columbus ; C. E. Inskeep, Urbana ; J. E. Johnson, Piqua ; T. E. Jones, Newark ; C. E. Leist, Columbus ; S. D. Meyers, Wilmington ; H. P. Miller, Sunbury ; J. V. Newton, Toledo ; I. A. Ruby, Plymouth ; S. Sisson, Columbus ; E. H. Shepard, Cleveland ; Walter Shaw, Dayton ; F. F. Sheets, Van Wert ; W. H. Turner, North Amherst ; D. S. White, Columbus ; W. B. Washburn, Tiffin ; Jos. Wingertor, Akron ; I. A. Wynn, Kenton ; W. E. Wight, Pittsburg, Pa. *Visitors*.—H. E. Smith, S. J. Rigdon, W. F. Huffman, H. C. Peabody, N. S. Schaeffer, W. G. Adams, B. Bartholow, W. A. Schaffter, W. A. Grace, S. W. Goss, H. E. Pinkerton, R. J. Carvey, G. H. Daughtrey, E. E. McDaniel, F. Rigdon, Vernon Dennis, R. E. Holin, Norton Dick, J. H. Reitz, C. C. Lipp, J. E. Bender, C. E. Langdon, A. D. Bullock, H. C. Mallow, W. H. Readhead, Eduordo B. Ibanez, Luis Gonsebatt, Tomas S. Funes ; these three last being from the Argentine Republic, veterinary students at the University. Minutes of last meeting read and adopted, with slight minor changes. The President's address was then delivered as follows :

PRESIDENT ANDERSON'S ADDRESS.

"My most pleasant duty at this moment as your presiding officer, is to welcome you, gentlemen, to the twentieth annual meeting of this organization.

"In no profession has there been greater strides or more scientific investigation than in ours. Our meetings are becoming more instructive each year; here we meet and exchange ideas on various subjects pertaining to our work, and no one who attends can go to his home without realizing that he has been many times benefited for the time consumed and expense incurred.

"Our work was formerly in dealing with the diseases of domestic animals alone, but now we have a wider field, in the relationship of the various contagious diseases of animals to the human family—their transmissibility and prevention.

"The investigations being made at the present time are of such a nature that we, as veterinarians, are every day assuming more responsible positions in sanitary and other matters in connection with our State and local boards of health. These are positions in which a man who is not thoroughly educated to his work, and conversant with the latest scientific discoveries, cannot be trusted.

"There are many times the health, and even the lives of an entire community, dependent upon his examinations and reports. We should, then, keep abreast of the times and favor higher education in our profession.

"Not only should all veterinarians receive a thorough course of training in a well-equipped veterinary college, but our State laws should require the registration of all who wish to engage in the practice in the State, and contain provision for prosecution of all violators. Our present laws are not enforced, because no one is paid to enforce them. Veterinarians in different sections of the State do not wish to prosecute their neighbors for violation of the law, for immediately the cry 'persecution' is heard.

"We should apply to the Legislature for an addition to our present law, creating an office, carrying with it the necessary appropriation for salary and expenses.

"It should be the duty of this officer to investigate and prosecute, if necessary, any violations of the State law which may be brought to his notice. This can be accomplished if we all 'put our shoulders to the wheel,' and never acknowledge defeat. If we fail before one Legislature, reorganize, and,

profiting by the experiences gained in the past, prepare for the next one.

"I hope to see the work started at this meeting. I would suggest that, before we adjourn, a committee be appointed to draft such a bill as meets the requirements of our Association; send a copy to each member, and it should then be his duty to personally see his Representative and Senator and explain to him the necessity of such a law, and, if possible, secure his support.

"Let us keep in touch with each other and in touch with our legislators, and I feel sure that success will crown our efforts.

"Scientific research should also be encouraged. Appropriations for State work are needed, and we should make these the principal objects of our Association, for to these investigations and the work done by the State at its experimental stations, more than anything else, do we owe our elevation to position on sanitary questions and live-stock problems that are daily referred to us.

"Now is the time to act on these questions, and I trust that the twentieth meeting of the Ohio State Veterinary Medical Association will be referred to in the future as the meeting at which aggressiveness was infused into the work, and with a perfect organization, harmony in our ranks, and a spirit of determination that acknowledges no defeat, our Association will be in the near future a leader of all other sister associations affiliated with the national organization."

The Secretary presented his report, as follows:

SECRETARY'S REPORT.

"*Mr. President and Gentlemen* :—Again we meet together in annual session with the same disadvantage as last year in having no reduced railroad rates. This week of each year is known in Columbus as convention week, for between Tuesday and Friday several agricultural and kindred associations meet here, bringing to the city several hundred guests as members and delegates; and, it would seem that it would be to the city's interest to obtain for this week half-fare railroad rates, which of itself would double the number of attendants at these meetings. Any of these associations would be granted one and one-third fare on the certificate plan, guaranteeing one hundred to be present and paying a special agent \$6 a day besides. This would be practically impossible for any of them excepting, per-

haps, the State Farmers Institute and Agricultural Convention, but it looks to me that by united action of all these bodies and with the earnest assistance of the Columbus Board of Trade or Civic League, that railroads would for their own interest give convention week of 1904 one fare for the round trip. It is a well-known fact that other cities obtain just such concessions, with far less assurance of numbers.

At our last session appropriate resolutions were adopted relating to the deaths of Prof. R. S. Huidekoper, of Philadelphia, Pa., and Dr. A. W. Clement, of Baltimore, Md. The committee furnished me with these resolutions, and you have seen that they were incorporated into the records of our last session; they were also published in the veterinary journals; but the copies mailed to the families of the deceased were both returned to me, one marked 'no such name found in the directory,' and the other simply 'return to sender.' I still have these copies in my possession. You also instructed your Secretary to notify all members engaged in business contrary to the code of ethics, giving them the privilege of withdrawing their membership and if this was not done then to notify them to appear before you at this session and show cause why they should not be expelled.

Members so engaged in business were notified, and as you know some withdrew their membership, but Dr. W. G. Jones, of Chillicothe, and Dr. Neil B. Jones, whose last known address was also Chillicothe, and who were both engaged in the manufacture and sale of proprietary medicines, and advertising by means of posters, illustrated bills, their photographs, etc., took no notice of our communications, so were both mailed a notice requesting them to appear at this session and show cause as to why they should not be expelled. This is now left to you for your consideration and final action.

We desire to call your attention to the following: 1st. We believe that you should instruct your Secretary as to some method to be followed in the collection of dues from delinquent members.

2d. We believe it a poor policy to use the Association's money in continuing to invite to our sessions those who have been suspended from membership; for if suspended for cause, then you did not want them; and if suspended for non-payment of dues, with only annual dues of \$1.00, then they themselves were not much interested in the success of the Association.

3d. Invitations for as many as ten consecutive years have been sent to some veterinarians and never once have they graced

our meetings with their presence ; further invitations to these men I believed to be time and money wasted.

4th. Another class have annually been invited and for years have attended our sessions, but as yet no one has been asked to present their applications ; some of us should at this session hint to them that it costs money to pay postage. The manufacturers of Red Ball Stock Food, the preparation whose advertisement in the AMERICAN VETERINARY REVIEW drew forth the criticism of this Association, have furnished us with a number of sample packages of their goods, which you can take home and examine at your leisure. Spratts Patent have also sent us fifty of their unique calendars to be distributed among you. The Denver Chemical Co. have sent us four dozen boxes of their Antiphlogistine, a preparation being used very extensively by the medical profession ; and you are each respectfully requested to use your sample and note its actions and utility as an addition to veterinary medicine.

This year has been a fairly successful one for us, having five accepted applications for membership ; \$76 in fees and dues collected ; and an expense account of \$39.50, leaving a balance in the treasury of nearly \$400.

Before concluding I may digress from a Secretary's duty, and call your attention to something which more properly should come under the jurisdiction of the Committee on Veterinary Progress.

First.—Veterinary education by correspondence ; we had supposed some time ago that all branches of education that could be included in the term correspondence schools had been exhausted ; but in that we were mistaken, for now comes the 'Correspondence School of Veterinary Medicine, Surgery and Dentistry,' with headquarters at Carroll, Iowa, and presided over by 'Dr. S. H. Johnson, V. S., Member of the State Board of Veterinary Examiners, and Assistant State Veterinarian.' They send out an attractive prospectus, telling you of the pleasant avocation of a veterinary surgeon ; of the great lack of sufficient numbers, as well as the fact that many veterinarians are earning \$3500 a year. They say they will train you to be a better veterinarian than your local professional, unless he is better than the average. They will teach you anatomy, surgery, dentistry, the uses and effects of medicine, and keep you abreast of the best thoughts of the veterinary profession. 'Be your own *veterinary*' is the title of the little book in which they tell you that their purpose is to provide instruction and guidance to those

who desire an education in veterinary medicine, surgery and dentistry.

It tells you that a *veterinary's* office is a poor place to study veterinary medicine, because such a large per cent. of them know and feel their incompetency.

They offer to *veterinaries* unsurpassed facilities for review, for it is never too late to amend for past inefficiencies, so long as this correspondence school offers its help. They offer four courses of study. First.—A one-year course, which qualifies a man very thoroughly to treat his own stock (of course the diseases of his own stock would be different from those owned by other people). Second.—A two-year professional course, which covers the same ground as a two-year veterinary college course, and qualifies a man in the technicalities of the profession. Third.—A post-graduate course, which is intended for ambitious pupils who wish in a *pre-eminent* way to qualify themselves. Fourth.—A six-weeks course for horse-buyers, traders and such like.

Their fees are \$35.00 a course; but in a private letter they offer us *10 per cent. discount for cash* and give their word that no better rate will be offered; and also tell us, that their system is no longer an experiment; and if we can read and write intelligently we can do the work with them, and can remain at home attending to our regular work and become a well-to-do veterinarian by the investment of a few dollars, and a few hours of time each day. Do not delay about the matter, but act now.

Gentlemen, just imagine yourselves, in the learning of veterinary medicine, diagnosing by *correspondence* the sounds heard in the pleural cavity; or in surgery, being taught the correspondence technique of performing vaginal ovariotomy; or in dentistry, obtaining the correct correspondence method of extracting the sixth upper molar. Shades of the departed Huidekoper, *the mills of the gods grind slowly*. Talk about the elevation of the veterinary profession; where is it, when one of those, honored by being classed as among its numbers, and selected by the laws of his State to act upon the qualifications and determine on who is eligible to practice the veterinary art in that State, is the president and prime mover of a mail-order veterinary help yourself?

Second.—This is on a brighter side of the professional by-way, and we desire to call your attention to an addition to veterinary literature which appeared a little over a year ago. The book is intended primarily for students; but the busy practitioner who obtains a copy will soon find himself using it as a

handy book of reference. Its subject matter, one in which we are all intensely interested, is 'Clinical Diagnostics;' and diagnosis you well know is the most difficult part of veterinary medicine, yet upon its being correctly made rests the foundation of all intelligent treatment; so practical assistance in this line should be highly acceptable and appreciated. It is all that its name implies and much more; its first part being taken up in describing the different methods appearing in arriving at a correct diagnosis, and then comes the classification of diseases with their symptoms. The diseases are arranged systematically, such as 'Diseases connected with the respiratory organs, diseases connected with the digestive organs,' etc., etc. Its practical conciseness and divestment of all superfluous descriptions and personal theories is well illustrated under the head 'Gastric and Intestinal Diseases of Cattle.' Under this head is given Acute tympanitis; chronic tympanitis; dyspepsia; acute gastro-intestinal catarrh; chronic gastro-intestinal catarrh; gut-ties; Invagination of bowels; licking disease of cattle and wool eating of sheep. All these appear upon one page of the book; condensed to nothing, some of you may say, but upon studying it you will find not one part of the necessary symptomatology lacking. The book is well bound, sufficiently illustrated, well printed on good paper, and one of the beauties in its printing is the different classes of type used, which not only rests the eye, but directs attention at once to the different phases of the work; and while it possibly contains more than its share of typographical errors, this can readily be overlooked; for its two hundred pages is a practical demonstration of much in little; all in all, it is a veritable *vade mecum* of its subject, 'Clinical Diagnostics.' The work was written by Prof. B. Malkmus, of Germany, and for its translation we must thank two of our Ohio colleagues, Dr. David S. White, and Dr. Paul Fischer, of the College of Veterinary Medicine, Ohio State University."

NOMINATION AND ELECTION OF OFFICERS.

Next order of business was the nomination and election of officers to serve for the present year. Drs. Blattenburg, Carl, Cliffe and White were nominated for President and the contest was spirited, requiring five ballots to decide (two of which were ties), and resulting in the selection of Dr. Blattenburg.

Drs. White and Carl were nominated for First Vice-President, with Dr. White being selected. Dr. Hill was nominated for Second Vice-President, Dr. Carl for Third Vice-President, Dr. Hillock for Treasurer and Dr. Gribble for Secretary.

There being but one nominee for each of these respective offices, on motion the rules were suspended and the Secretary instructed to cast the ballot of the Association for their election.

The Chair then declared the following to be officers-elect for the year 1903:

President—J. H. Blattenburg, Lima.

First Vice-President—D. S. White, Columbus.

Second Vice-President—R. C. Hill, West Alexandria.

Third Vice-President—L. W. Carl, Columbus.

Treasurer—T. B. Hillock, Columbus.

Secretary—Wm. H. Gribble, Washington C. H.

Drs. Hillock and Gribble were each elected for the twelfth consecutive time.

Quite an amount of correspondence had been received, little of which required to be read to the Association. One, a letter from Dr. A. S. Cooley, of Cleveland, Ohio, inviting this Association to attend the coming meeting of the American Veterinary Medical Association to be held at Ottawa, Canada, Sept. 1 to 4.

PAPERS PRESENTED.

The first paper on the programme was description of cases, entitled "What is It,"* by Dr. I. A. Wynn. These cases were but little debated, it being thought Case III. was due to the poll-evil. The next paper, "Examinations for Soundness,"* was read by Dr. H. Fulstow.

This was debated by all, as to what constitutes soundness; as to how a certificate should be worded; as to the responsibility of the examiner, and for such an examination as described what should be the fee.

Dr. F. F. Sheets described an interesting case of "Azoturia with Albuminuria."* Much interest was manifested in this case, as azoturia can always bring out a long-winded argument.

The session now adjourned to meet at 7.00 P. M.

EVENING SESSION.

Meeting called to order at 7.30 P. M. with Dr. F. E. Anderson in the chair.

Drs. Myers, Hill and Cliffe were appointed a committee to audit the books of the Association.

The Committee on Veterinary Progress then offered the following as their report:

* Will be published in an early number of the REVIEW.

REPORT OF COMMITTEE ON VETERINARY PROGRESS.

"*Education.*—The Committee is pleased to report advancement in the equipment, facilities and instructional features of the schools. The University of Pennsylvania expects to expend \$250,000 in replacing the veterinary plant recently razed to make room for another departmental building. Harvard intends to devote a portion of the \$6,000,000 soon to be available for a new medical school, to a college of comparative medicine. Your State University has already begun rebuilding and re-equipping. By the opening of another academic year the Veterinary Laboratory Building will be ready for use. It is to be a three-story structure and will contain the departments of anatomy, pathology, bacteriology, pharmacology, temporary quarters for surgery. When complete it will be for our purposes ideally arranged and adequate. When a new clinical building is constructed, the present antiquated hospital will be torn down. As yet, we are far from the desired goal in the matter of uniform matriculation requirements. The standards of no two schools are identical. There are two sorts of veterinary schools in the United States, the proprietary institution conducted largely on a commercial basis, and the State school, supported by the State and Nation. The motto of this latter institution should be to give to the student the best possible training without figuring the cost. Formerly, the proprietary school was a rival of the State school, but gradually the time is coming when the former must obtain a constituency from a class of students unable to enter the better equipped college. Already three veterinary schools have intimated that they desire to lengthen the course of study from three to four years. This is a progressive movement of no small significance which, all else equal, should be fostered. Even a twenty-seven months' course is far too short to permit the best possible undergraduate training. Even the proprietary schools have lengthened their courses from twelve to eighteen months.

"*Literature.*—The veterinary literature in English has been augmented by the addition of new books worthy of finding a place in our libraries. Unfortunately, some may think, the best of these are translations—mostly from the German. However, except in the matter of a few details, they may be applied to our American conditions, and, used with judgment, will help place us a little nearer where we belong. In a brief, general report of this kind the titles need not be mentioned, especially as any book seller's catalogue contains them.

"State Veterinarian.—During the last session of the Legislature, a bill was passed, transferring the duties of the State Live Stock Commission to the State Board of Agriculture. The Board has in its employ a veterinarian, whose work will speak for itself. This is a step in the right direction, but it is to be hoped that eventually the office of State Veterinarian will be created, and that ultimately this official will be furnished with every facility needful to carry on his work in efficient manner.

"Government.—The Bureau of Animal Industry has been gradually perfecting its organization until now it is recognized the world over, not only as being up to the scientific standard of the times, but an authority on many scientific subjects. The chief disadvantage under which it labors just now is the low-salary-limit evil, many of its most efficient employés yielding to tempting offers elsewhere. It is to be hoped that those who have the power to remedy this evil will do so.

"Army.—In spite of the most strenuous efforts on the part of the Committee on Army Legislation of the American Veterinary Medical Association, the position of army veterinarian is still an anomalous one. The rank of officer which is granted the veterinarians of the other armies in the world is denied to our representatives wearing Uncle Sam's blue uniform. Lack of unity on this subject on the part of the profession, coupled with the prejudices nourished in the bosoms of legislators, is solely responsible. The remedy is apparent.

"Science.—*Surgery:* Great advance has been made in surgery. The possibilities of antisepsis have rendered the performance of operations, formerly to be avoided on account of the high mortality they brought, matters of daily occurrence in routine practice. The prejudice against antiseptic methods are happily on the wane.

"Medicine.—Especially along the line of infectious and contagious diseases has advancement been made. To be brief, many diseases formerly thought incurable yield more or less readily to modern 'serum-therapeutics,' silver and iodine preparations administered sub-cutaneously or intra-venously. The doctrine of immunity has been spreading until even tuberculosis has been included within its possibilities. Dr. Pearson's work in this particular field appeals to us from its originality and Americanism.

"Respectfully submitted,

D. S. WHITE,
"WALTER SHAW,
"G. W. CLIFFE."

This was followed by the Committee on Contagious Diseases offering two separate papers as a report.

REPORT OF COMMITTEE ON CONTAGIOUS DISEASES.

" If the Committee on Contagious Diseases were to be accused of gross neglect of duty, I am of the opinion that we would have to plead guilty. I think the fact of the matter was that Shepard left it to Burneson and Myers; Burneson left it to Shepard and Myers, and the latter left it to Shepard and Burneson. I expected all the time that Dr. Shepard would act as chairman and with the assistance of the other two would write up a report. On Saturday last I received a communication from Dr. Shepard stating that it would be impossible to prepare anything on the subject. Dr. Burneson, some time ago, expressed a willingness to contribute his share, but I have not yet received his report. The only way I could see out of the muddle was to jot down a few notes from what sources I had at hand, hoping in that way to bring out some discussion which might be of interest. As far as I am informed, the United States, and especially the State of Ohio, has been especially free from contagious diseases during the past year.

" It is hardly necessary for me to dwell upon the recent outbreak of foot-and-mouth disease in the New England States. The energy exercised by Secretary of Agriculture Wilson in his effective campaign against the disease is certainly to be commended. The affected animals, numbering about 1300, have all been destroyed, and a thorough disinfection made in all the infected districts, except in a limited area in Massachusetts. It is to be regretted that some of the owners of the diseased cattle in the yet infected districts, are trying to make money out of the epidemic by refusing the offer made by the Department of Agriculture, and are holding out for higher prices. The Department has not the power to enforce the slaughter of the diseased animals, but it has the power to effectively quarantine the localities which the owners refuse to allow to be cleaned up. The owners of the diseased animals have been reimbursed at 70% of the animals' value if they were healthy.

" Tetanus, which in some sections has caused serious losses, may, in most cases, be prevented by the use of antitetanic serum. The injection should be made early and repeated in eight to ten days. Prof. Labat says: 'Acute tetanus cases with rapid development, are fatal, and the serum powerless against them. Chronic cases which progress slowly seem to be influ-

enced by injections of serum, and recovery, if it takes place, occurs more rapidly.'

"The Koch theory in regard to tuberculosis seems to have died a natural death. Several investigators, viz., Drs. Pearson and Gilliland, of Pennsylvania, and Prof. Behring, of Berlin, Germany, have been conducting experiments with a view to discovering a method of immunizing cattle against tuberculosis. The work of Pearson and Gilliland seems to date the farthest back. We quote the following from the *Breeder's Gazette*: 'The process used was to inject into the vein of the animal to be protected, a small quantity of a suspension of tubercle bacilli non-virulent for cattle. This procedure, called vaccination, may be repeated several times, with gradually ascending quantities. The immediate effect is to produce a passing fever, following each injection, which does not annoy the animal enough to cause it to lose a single meal. The general health is not disturbed by the process of vaccination. When the series of vaccinations were completed the animal had an astonishingly high degree of immunity to tuberculosis.'

"In the last experiments completed four young cattle were used. Two of these were vaccinated last March. All four were inoculated in July by injecting into the windpipe a quantity of culture of virulent tubercle bacilli. A large quantity was introduced and each of the four animals received exactly the same treatment. These animals were killed in October. It was found that the cattle that had not been vaccinated were extensively tubercular, showing alterations of this disease in the windpipe, lungs, throat and intestinal glands; while the two vaccinated animals, inoculated the same time from the same material and in the same way, were free from tubercular infection and were sound.'

"No attempt has been made to canvass the State to ascertain where and to what extent contagious diseases exist. It is to be hoped that that will be brought out in the discussion that follows. The following contagious diseases have existed in the section in which we reside, viz., the southern part of the State, during the past year: Strangles and influenza, a few isolated cases. We had a small outbreak of rabies, limited as far as I have learned to eight cases as follows: two horses, three cows, two dogs, and one cat. Hog cholera has made its appearance in a few herds. This disease has not been so prevalent the past few years, which I think is partly due to the manner of handling the hogs. The farmers do not keep their hogs, as they

used to do, until they are a year or more old before they are fed out, but one might say they are put on full feed and kept that way from the time they are farrowed. If cholera makes its appearance the farmer at once telephones the hog-buyer, who usually takes everything that can stand up and eat, and ships them to the nearest market. One of our farmers lost five young cattle in close succession with what we thought to be black-leg, but microscopic examination by the State Veterinarian failed to verify the diagnosis. Another disease which, while we think not contagious, might not be out of place here. We refer to scours in young calves. This disease usually makes its appearance when the calf is from one to two days old, and if the animal does not receive prompt attention it does not live to be much older. We have made the following observations in regard to this disease. It almost exclusively attacks calves in dairy herds. It nearly always is found in herds where the cows have been fed on silage. It does not attack all herds that use silage.

S. D. MYERS."

* * *

HAMMOND, IND., Jan. 9th, 1903.

Dr. S. D. Myers, Chairman of Committee on Contagious Diseases, Ohio State Veterinary Medical Association.

SIR:—I respectfully submit the following report on an outbreak of disease among cattle in Butler County, Ohio, investigated by Dr. J. H. Wilson, of Hamilton, O., and myself.

J. C. BURNESON.

"August 29th, 1902, Dr. J. H. Wilson, of Hamilton, O., was called to visit the farm of Mr. Campbell, adjoining the city, and treat a valuable Jersey cow, which had taken suddenly ill at pasture. During the time this cow was sick, another became affected with apparently the same disease and died in a very short time. I was called in consultation, and together we closely watched the disease in different members of the herd, and as opportunities for post-mortem studies were available, they were fully utilized, and I will endeavor to relate as accurately as possible the symptoms and post-mortem lesions.

"*Symptoms.*—Langid movements, straggling gait, posteriorly, receding eye, erection of the coat, especially along the back, disinclination to move about much, and to all appearance the animals seemed to be suffering from a severe headache, and within 24 hours would invariably be found in a recumbent position and unable to rise; pulse in fair condition and tempera-

ture but slightly elevated until within six or eight hours before death, when it would ascend to $105^{\circ}\text{--}6^{\circ}$ F., and then recede as vitality diminished, death usually occurring within 36 or 48 hours after the first noticeable symptoms of the disease. Several cows were found dead in the field, the owner not having previous knowledge of their having been ill. Some cows were found down, no premonitory symptoms having been observed either by the owner or ourselves, as we visited the farm once and sometimes twice daily and examined the entire herd at each visit. Eight cows died at the rate of one every other day. One which we supposed would die, aborted, and from that time improvement was noticeable and she gradually recovered. Some developed symptoms of cerebral disturbance, several becoming frenzied, while others became comatose after recumbency. In several a bloody diarrhoea appeared in the first stages of the disease. The owner suggested possible poisoning by some toxic plant, as the herd grazed in a field bounded on one side by the Miami River and on the other by a large hydraulic, and was covered by a luxuriant growth of a variety of weeds, but careful search failed to reveal anything of so poisonous a nature, but, nevertheless, the herd was immediately removed to other and more elevated land, without any noticeable change for the better; in fact, most of the cattle died after being removed from the low-land along the river.

Autopsy.—The liver showed indications of having been in an inflamed condition, and was quite friable in the majority of cases, so much so in several animals as to lead one to surmise that, had the disease been of longer duration, complete disintegration might have taken place; diffused areas of variable sizes, of a darker color, were noticeable, appearing very much as though those parts had been in contact with other organs more acutely inflamed. In the darker colored livers, gas escaped in small quantities, upon incision. This condition of the liver was not constant, as several livers examined appeared to be in a perfectly healthy condition.

“Another condition worthy of mention in connection with those livers most severely affected, was that of the bile, which appeared exactly as I have found in cases of Texas fever—that chewed-grass, slightly congealed condition. The most marked and constant pathological condition found was that of the spleen, which, as a whole was dark in color, some having a dark mottled appearance, and slightly enlarged; there was complete disintegration of the spleen pulp, which, upon inci-

sion of the capsule, flowed out slowly, and in appearance very much resembled dark-colored apple-butter.

"The kidneys were highly congested and friable, some being quite as dark as the spleen. The urine contained in the bladder varied from a dark wine color to an inky blackness.

"The contents of the omasum was very dry and hard. All viscera, except those mentioned, were, as far as careful microscopic examination revealed, in a perfectly healthy condition. It is needless to state, we suspected anthrax after several autopsies were held, and therefore proceeded to have careful microscopic examinations made of the affected viscera; these examinations were made by four different parties, one of which claimed positively to have found the *Bacillus anthracis*; this being a professor (whose name I cannot now recall) of Miami University, Oxford, O.

"From one of the cows we removed sections of the spleen, liver, and kidneys and the tip of the ear, and expressed them immediately to the Division of Pathology, Bureau of Animal Industry, for examination, together with a full account of the disease. In securing these sections for bacteriological examination, every precaution was taken to prevent contamination from without—forceps, knives, bottles and corks receiving a thorough sterilization.

"Immediately upon sending the specimens and report to Washington, the owner being very anxious that something, as yet untried, be determined upon, an order was placed with the H. K. Mulford Co., for enough anthrax vaccine to inoculate the remaining members of the herd (14 in number). Accordingly the vaccine was received and the cows inoculated September 14th, followed by the second inoculation September 23d. No more sickness or death followed, and I recently received word from Dr. Wilson as follows:—'Several of them have since calved and are doing well. As to any conclusions, I still think it was anthrax.'"

The following is a copy of the report from Washington:

WASHINGTON, D. C., Oct. 13, 1902.

Dr. J. H. Wilson, Hamilton, O.

SIR:—In reply to your letter would say that the specimens taken from the cow and forwarded to this laboratory for examination, arrived in good condition. Cover-glass preparations were made at once, with the result that no germs were seen resembling anthrax bacilli. Tubes of culture media were inoculated from the liver and spleen, both of which showed an abundant growth. After careful examination, the different organisms were isolated by the plate method and experimental

animals were inoculated with the pure cultures. The only germ which caused any reaction in these animals was studied bacteriologically, and found to be the *Bacillus pyocyanus*, an organism occasionally found in animal tissues, but which has never been considered as a causative factor in producing outbreaks of disease in the large domestic animals. We are at a loss to account for the disease, and would be pleased to receive more specimens, if obtainable, taken from an animal immediately after death. The tissues may be wrapped in muslin or cheese-cloth saturated in a weak formalin solution or a five per cent. solution of carbolic acid.

If specimens of the affected organs several inches in diameter are treated in this manner and immediately expressed to us, the interior would possibly be in proper condition from which to obtain desirable cultures.

Very respectfully,

A. M. FARRINGTON,

Acting Chief of Bureau.

"Under these circumstances, the questions arise: Was it anthrax or was it not? Had the disease spent itself or did the inoculations act as a preventive? That it was a contagious disease with which we had to deal, there is no doubt in my mind, and in spite of the negative results of carefully conducted bacteriological examinations, I cannot associate the symptoms and pathological conditions found with any other disease but that of an anthracoid type.

"The conditions under which this herd was kept, precludes the idea of possible contamination by contact with other animals on adjoining farms or along the roadside, as they were fully a quarter of a mile from the highway and were surrounded by fields belonging to the same farm. The bottom-land upon which they pastured, has not been inundated since 1889. No similar disease had occurred, as far as we could learn, in all the country round."

Considerable debate on the report of Dr. Burneson as to the cause of the outbreak. Anthrax being so easily determined microscopically, it was not thought possible to be that disease.

The next paper was a "Report of Interesting Cases," by Dr. Blattenburg.* Considerable talk was engaged in, in reference to both these cases, the first on account of the age of the patient and the second the novelty of the operation. We had a somewhat similar case, but did not treat it nearly so well. We cut down on to the urethra some distance below the anus, put heavy catgut ligature around it, then slit it up about four inches, stitching its edges to the skin wound. The bull was not castrated, but fattened as rapidly as possible, and the thighs well oiled daily. He did well.

* Will be published in an early number of the REVIEW.

Dr. Sisson next read a paper "Some Notes on the Topographical Anatomy of the Ox."*

He showed that the relative positions of the stomachs, oesophagus, etc., were not in the living animal such as they are described in our text books.

While discussing this, Dr. White called attention to several cases of traumatic indigestion of cattle, which had been operated upon; dispensing with the towel to prevent food dropping into the abdominal cavity, and temporarily stitching the rumen to the skin wound.

Under the title "Diagnostic Puzzles,"* Dr. Gribble reported some interesting cases. In the talk that followed the writer received little or no information in reference to the case he was so much interested in.

The Chair now appointed Drs. Shaw, Fair and Brumley a committee to which was referred the applications for membership, after which the remainder of the evening was taken up in general conversation, and reporting of cases; adjourning at 11 P. M. to meet at the Veterinary Hospital the next morning.

WEDNESDAY, JANUARY 14, 1903.

Meeting called to order in the operating room of the Veterinary Hospital at 8.15 A. M. by President F. E. Anderson.

Dr. Gribble gave notice, and Dr. Carl endorsed that at the next meeting of this Association they would present for endorsement or rejection the following amendment to the By-laws: "Art III. Sec. 2.—Applicants, residents of Ohio; must be legally eligible to practice; in accordance with the laws of the State."

The committee on applications rendered their report, after which the following were elected to membership:

Roy E. Davis (Ont. V. C., '94), Toledo, O.; vouchers, F. E. Anderson and J. H. Blattenburg.

I. A. Ruby (Ont. V. C., '93), Plymouth, O.; vouchers, H. Fulstow and Sydney D. Myers.

N. Wells Hillock (C. V. C., '02), Columbus, O.; vouchers, W. E. Wight and W. R. Howe.

Paul Fischer (Ohio S. U., Vet. Dept., '92), Columbus, O.; vouchers, W. H. Gribble and O. V. Brumley.

C. E. Leist (Ont. V. C., '93), Columbus O.; vouchers, L. W. Carl and W. H. Gribble.

Two other applications were received; but as the fees did

* Will be published in an early number of the REVIEW.

not accompany the applications, the committee could not legally entertain them.

The matter of W. G. Jones and Neil B. Jones, as per the Secretary's report, was brought up and acted upon, neither being present. Motion was made, duly seconded, and more than two-thirds of the members present voting in the affirmative, the Chair declared them duly suspended from further membership, and the Secretary was instructed to so notify them.

The following report was offered :

"JAN. 14, 1903.—We, the auditing committee appointed to audit the books of the Secretary and Treasurer, beg leave to report as follows: Cash on hand at end of last meeting, \$342.29. Cash received since last auditing, \$76.00; expenses, \$39.50. Total cash on hand, \$378.79.

"SYDNEY D. MYERS,
"R. C. HILL,
"G. W. CLIFFE,
Committee."

Dr. Shepard gave us the history and expectations of the veterinary society of the city of Cleveland, one bright feature being that all the veterinary graduates of the city but one were associated with it; but we noticed the names of several who were not as yet members of this State Association.

The officers for 1903 were now seated, and speech-making took up a few minutes' time; after which President J. H. Blatnenburg appointed the following

STANDING COMMITTEES.

Contagious Diseases—Paul Fischer, Walter Shaw, E. H. Shepard.

Veterinary Progress—David S. White, W. R. Howe, F. F. Sheets.

A general vote of thanks was adopted, including each and every one who participated in any way to the success of the session.

For our semi-annual meeting place the cities of Urbana, Lima, Cleveland and Columbus were suggested, but in the rush and bustle of preparing for clinics the Secretary is still at a loss to know which city was decided upon; and the session adjourned, as the time for clinics had arrived and were to be held in the room in which we were then.

Several cases were reported during the session by the younger members of the profession, but for some reason were very little debated. This is not very encouraging and does not offer to them much stimulus to keep notes of cases for future meetings.

The clinics were held in the operating-room of the University Veterinary Hospital. Among the operations were: Median neurectomy, by Dr. Blattenburg; tibial neurectomy, by Dr. Wight; cunean tenotomy, by Dr. Anderson; peroneal tenotomy, by Dr. Myers; dentistry, by Dr. Newton; casting a horse, chloroforming a horse, spaying a bitch, demonstrating a canine operating table, etc., etc.

About 3 P. M. most of us began wending our way homewards, feeling well repaid for attending the twentieth annual session of the Ohio State Veterinary Medical Association.

W. H. GRIBBLE, *Secretary.*

MINNESOTA STATE VETERINARY MEDICAL ASSOCIATION.

The sixth annual meeting convened at the new Veterinary Building, State Experimental Farm, St. Anthony Park, 1.30 P. M., Jan 15th, 1903.

The President, Dr. Lyford, Minneapolis, in the chair. At roll-call the following veterinarians answered to their names: Drs. Lyford, Brimhall, Annand, Sexton, Butler, Minneapolis; Price, St. Paul; Reynolds, State Experimental Farm, St. Anthony Park; Youngberg, Lake Park; McKenzie, Northfield; Ward, St. Cloud; Gould, Worthington; Gould, Fairmont; Lyon, Hutchinson; Peters, Litchfield; Lees, Red Wing; Whitcomb, Austin; La Pointe, Le Sueur; McDonald, Brainard; Lambert, St. Peter; Illstrup, Wilmar; Shore, Lake City.

The President, Dr. Lyford, instead of delivering an address as is usual on such occasions, reviewed the work of the local committee of arrangements for the entertainment of the A. V. M. A. during the meeting in Minneapolis in September last. He also commented on the criticisms of the A. V. M. A. meeting by one of the veterinary journals.

The Treasurer's report was read and accepted. The applicants for membership were Drs. Christianson, Luverne; Davidson, Grand Forks, N. D.; Mack, Stillwater. They were unanimously elected and admitted to membership in the Association.

The reports of committees were as follows:

Colleges—Dr. Peters failed to make any report. *Infectious Diseases*—Dr. Annand read quite a lengthy report reviewing the work done by the Veterinary Department of the State Board of Health. *Bacteriology*—Dr. Brimhall gave quite a comprehen-

hensive review of the work done by the Bacteriological Department of the State Board of Health, particularly regarding the diseases "Swamp Fever" and "Hæmorrhagic Septicæmia."

Surgery—Dr. Hay being absent no report was offered. *Medicine*—Dr. Price failed to make any report on the above subject.

Legislation and Empirics—Dr. Ward, Chairman of Committee on Legislation and Empirics, gave a report on the prosecution of an empiric in the St. Paul Municipal Court, who escaped conviction on a technicality and insufficient evidence. Has another case pending at Twin Valley. Dr. Ward suggested the following amendments to the Veterinary law, pertaining to the Board of Examiners: (1) All candidates presenting themselves for examination must be graduates of three-year schools. (2) Changing the dates of the meetings of the Examining Board to conform to those of the Association. (3) To increase the fee for examination from \$5 to \$25. He also suggested the passage of a law to grant compensation to owners for the destruction of horses suffering from glanders.

Meeting adjourned for supper.

Meeting was again called to order at 7.30 P. M., when a discussion of Dr. Ward's report took place. Dr. Reynolds moved that Dr. Ward's recommendations, except the one relating to three-year graduates, be adopted. This was seconded by Dr. Gould and carried.

The Association then proceeded to the election of officers for the ensuing year, resulting in the following selections:

President—Dr. K. J. McKenzie, Northfield.

First Vice-President—Dr. H. C. Lyon, Hutchinson.

Second Vice-President—Dr. R. La Pointe, Le Sueur.

Secretary-Treasurer—Dr. J. S. Butler, Minneapolis.

Trustees—Drs. J. W. Gould, Fairmont; S. D. Brimhall, Minneapolis; H. C. Peters, Litchfield.

Dr. Ward moved that the thanks of this Association be extended to the Local Committee of Arrangements, who did so much to make the late meeting of the A. V. M. A. such a successful one.

To the Commercial Club of Minneapolis for the liberal financial assistance and other courtesies shown the Local Committee of Arrangements. To the State Board of Health and Dean Liggett and associates at the Experimental Farm for their assistance rendered the Local Committee.

The Secretary was instructed to convey the thanks of the Association to the above organizations. The Secretary was in-

structed to send a copy of the resolutions drawn by a special committee to Dr. Frank, of Warren, upon the death of his wife.

A paper was then read by Dr. Butler, of Minneapolis, on "Acute Indigestion in the Horse,"* which excited quite a lengthy discussion.

Dr. Brimhall, Minneapolis, then read a paper entitled "Some Impressions Gained while in Chicago at the Live-stock Show and in the East while Visiting the Locality Infected with Foot-and-Mouth Disease."

Meeting adjourned until 9 A. M. to-morrow.

On Jan. 16th, at 9 A. M., the Association reconvened with the newly elected President, Dr. McKenzie, in the chair.

Dr. Youngberg read a paper on "Inversion of the Uterus in Mares."* Quite a discussion followed, especially regarding the method employed in returning the inverted uterus.

Dr. Gould, Worthington, read a paper entitled "Some Puzzling Cases Occurring in Cattle."* Dr. Reynolds thought the symptoms were similar to those of the cattle affected at the State Farm, but the disease was less virulent. Probably cerebro-spinal form of haemorrhagic septicæmia.

Dr. Cook, Duluth, read a paper on "Purpura Hæmorrhagica." Quite a spirited discussion followed regarding the puncturing of the swellings advocated by the author. The members were divided as to this plan of treatment, except in cases where swellings of the nose threaten suffocation. Meeting adjourned for dinner.

The meeting was again called to order at 1.30 P. M., Dr. McKenzie in the chair.

Dr. Lyford read a paper on the "Mechanical Treatment of Pleurisy," demonstrating the manner of applying the splints, girths, etc., on the animal. Considerable discussion followed. Members were divided in opinion as to the necessity of such appliances in the horse.

Dr. Lyford exhibited one of his horses operated upon at a former clinic for enlarged bursæ of the hind fetlock. This operation, considered so radical by some of our Eastern veterinarians, was certainly a decided success on this animal. Was very lame and bursæ of considerable size before operating. Now has entirely recovered from the lameness, and the enlargement scarcely noticeable.

Moved and seconded that the place of meeting in July be

* Will be published in an early number of the REVIEW.

left to the Board of Trustees and executive officers of the Association.

Meeting then adjourned for the clinic. The clinic was arranged by Drs. Reynolds and Brinham, and consisted of the following cases : Plantar neurectomy, Drs. Whitcomb and Youngberg ; median, Drs. Reynolds and Youngberg ; poll-evil, Drs. Gould and Youngberg ; anal fistula in a mare, Drs. Butler and Christianson ; trephining superior maxillary sinus, Drs. Lees and Peters.

J. S. BUTLER, Sec'y-Treas.

CENTRAL CANADA VETERINARY ASSOCIATION.

At a well-attended meeting of the veterinary practitioners of the City of Ottawa and vicinity for the purpose of perfecting arrangements for the entertainment of the American Veterinary Medical Association at its fortieth annual meeting, to be held during the first week in September next, the Central Canada Veterinary Association was launched. Through the courtesy of the city, which is doing everything in its power to make the coming meeting of the A. V. M. A. a grand success, this meeting of the veterinarians of Ottawa and vicinity was held in the City Hall on Thursday evening, February 5th.

The veterinarians present were :—Drs. Higginson, Rockland ; Lynchke, Carp ; McGuire, Cornwall ; Young, Cobden ; Young, Merrickville ; Young, Alinonte ; Allen, Brockville ; Irvine, Maxwell ; Rutherford, Harris, White, James, Higgins, Hollingsworth, Hopkins and Boucher, of Ottawa.

The meeting was called to order by Dr. A. W. Harris, the chairman of the previous meetings held by the city practitioners. Dr. W. W. Boucher read the minutes of the meetings that those attending might become acquainted with the steps already taken toward a concerted action for the entertainment of the A. V. M. A.

Dr. J. G. Rutherford explained in detail his visit to Minneapolis, at which time he invited the A. V. M. A. to hold its next annual meeting at the Canadian Capital ; the proposition being heartily supported and unanimously received by them. He also explained the present status of the veterinary profession in Canada, and that, with the exception of Manitoba, where there has been an exceedingly strong association for fourteen years, which association has been the means of getting through the Legislature of that Province the strongest bill regulating the practice of veterinarians enjoyed by any such body in the world ;

and Quebec, where an association was formed last year which succeeded in obtaining legislation and which is this year endeavoring to strengthen its existing legislation.

Dr. Rutherford explained that while an association here in this section would be unable to take active steps in obtaining legislation, its salutary influence would be beneficial in stimulating and encouraging the existing veterinary associations in both the Provinces of Ontario and Quebec to a more concerted action.

Active discussion followed, in which each veterinarian present took an active part, all agreeing that the time was opportune for effective work toward organization and the stimulation of a more friendly feeling among the members of the profession.

Dr. Rutherford moved that we proceed to form an association of the veterinarians of Ottawa and vicinity, to be called "The Central Canada Veterinary Association." The motion was seconded by Dr. White and unanimously carried without further discussion.

After the naming of the association the next step was the election of officers as follows:

Honorary President—Dr. J. G. Rutherford, Ottawa.

President—Dr. A. W. Harris, Ottawa.

Vice-President—Dr. T. A. Allen, Brockville.

Secretary-Treasurer—Dr. W. W. Boucher, Ottawa.

After some discussion it was decided that a Board of Directors was essential, the Board to consist of the President, Vice-President, Secretary-Treasurer and eight additional members to be elected by the Association, the following being unanimously chosen:—Drs. Lynchke, Carp; W. C. Young, Almonte; F. Fisher, Carleton Place; W. C. McGuire, Cornwall; A. E. James, Ottawa; G. W. Higginson, Rockland; J. B. Hollingsworth and C. H. Higgins, Ottawa.

It was decided that the Executive Committee should consist of the Ottawa members of the Board of Directors for the sake of convenience in the holding of meetings. Dr. C. H. Higgins was elected as official reporter.

The Executive Committee was directed to prepare the Constitution and By-laws of the Association to be submitted to the Board of Directors for approval, said Constitution and By-laws to be presented to the next meeting of the Association. During the discussion relative to the drawing up of the By-laws inquiry was made as to eligibility for membership in the Association. This

matter of eligibility of membership was left wholly with the Executive Committee and all applications for membership should be passed upon by this body before being presented to the Association.

A motion of thanks was extended to Dr. Rutherford for his service to the profession of Canada in inviting the American Veterinary Medical Association to hold its next meeting in Ottawa, and the interest he has taken, not only in the formation of the Central Canada Veterinary Association, but in matters pertaining to the advancement of the profession throughout the whole Dominion. Unanimously carried.

The date of the next meeting was set for Easter Monday evening, April 13th, 1903, at 7.30 P. M., in the City Hall, Ottawa, which it is expected will be largely attended by local veterinarians.

On motion of Dr. James, the meeting adjourned.

CONNECTICUT VETERINARY MEDICAL ASSOCIATION.

The annual meeting was held at Hotel Hartford, Hartford, Tuesday, February 3, 1903, and was opened at 3.20 P. M., with First Vice-President Dr. H. Whitney in the chair. The following members were present: Drs. E. C. Ross, J. H. Gardner, H. Whitney, H. E. Bates, J. E. Underhill, L. B. Judson, Geo. T. Crowley, F. G. Atwood, P. F. Finnegan, B. K. Dow and F. A. Ingram. Visiting veterinarians: Drs. Chas. L. Colton and C. E. Dornheim.

The report of the Secretary and of the Treasurer were read and voted to be accepted.

As there was not a quorum of the Board of Censors present, upon motion of Dr. Ross it was voted that the President appoint members present to fill the vacancies. The President appointed Drs. L. B. Judson and J. E. Underhill.

The Secretary presented the names of the following veterinarians for membership in the Association: Geo. W. Loveland, of Torrington, graduate C. V. C., class '94, and member of the A. V. M. A.; Fred F. Bushnell, of Winsted, graduate N. Y. S. V. C., '02; C. E. Dornheim, of New London, graduate C. V. C., class '02, and Chas. L. Colton, of Hartford, graduate of Veterinary Department University of Pennsylvania, class '01. These names were referred to Board of Censors for their action. The Board reported they found all applicants eligible

and recommended that they be elected to membership in the Association. It was voted to suspend the by-laws, and the applicants were unanimously elected to membership in the Association.

The following officers were unanimously elected for the ensuing year:

President—Dr. Harrison Whitney, of New Haven.

First Vice-President—Dr. Thomas Bland, of Waterbury.

Second Vice-President—Dr. J. E. Underhill, of New London.

Secretary—Dr. B. K. Dow, of Willimantic.

Treasurer—Dr. E. C. Ross, of New Haven.

Board of Censors—Drs. H. E. Bates, of So. Norwalk; F. A. Ingram, of Hartford; R. D. Martin, of Bridgeport; F. S. McGuire, of New Britain, and L. B. Judson, of Winsted.

The Secretary brought up the subject of having the meetings begin early in the day, and material provided for a good clinic in connection with it. The matter was discussed at some length by most of those present.

Dr. Ross extended a cordial invitation to the members to hold the next meeting in New Haven at his hospital, and he would have material ready for clinic and operations. Dr. Atwood extended an invitation to visit his hospital and use his new operating table. It was voted to hold the next meeting at Dr. Ross's hospital, in New Haven, August 18th, 1903, at 10 o'clock A. M.

Upon motion made by Dr. Ingram, seconded by Dr. Colton, it was voted that the following New Haven veterinary surgeons act as a committee to provide ample material for a clinic and to select operators and make all arrangements for the meeting: Drs. E. C. Ross, H. Whitney, F. G. Atwood and J. H. Kelley. Upon motion made by Dr. Atwood, seconded by Dr. Ingram, it was voted that the Committee of Arrangement extend a special invitation to Dr. Bland, of Waterbury, to be present at the next meeting and perform one or more operations.

The Secretary presented the names of Drs. R. P. Lyman and N. S. Mayo, who having moved from the State and wished to resign as members of the Association. Dr. Ross said these two members had done a great amount of work for the Association and were very instrumental in its reorganization, and thought as a matter of respect and courtesy to these two members, their names ought to be placed on the roll of honorary membership in the Association, and made a motion to that effect. After considerable discussion the motion was put and voted down.

Dr. F. G. Atwood read a paper on "Technique of Veterinarians' Operating Rooms and Equipment." He also showed several photographs of his new operating table, and explained its work and advantages.

Dr. Dow read a paper on "Cerebro-Spinal Meningitis," which elicited much discussion upon the subject, and gradually drifted into a lively and interesting discussion of glanders and tuberculosis.

The hour being so late, it was decided to leave the subjects selected for discussion over to the next meeting. The subjects were azoturia, canine distemper and scrotal hernia.

At 7 o'clock it was voted that the meeting adjourn.

B. K. Dow, *Secretary.*

ALLEGHENY COUNTY VETERINARY MEDICAL ASSOCIATION.

Vice-President Rectenwald presided over a large and enthusiastic meeting at the office of Dr. J. E. Spindler, on the evening of Jan. 28th.

Members present : Drs. Ainsworth, Boyd, Gearhart, Gilmor, McNeil, Rectenwald, Richards, Spindler, Spohn, Taylor, Waugh. Visitors : Drs. Bittles and Porter, of New Castle ; Hoskins, of Philadelphia ; Laberg, of Beaver Falls ; Jones, of Pittsburgh ; Magee, of Uniontown ; Prothero, of Johnstown ; W. J. Waugh, of Washington, and Weitzel, of Allegheny, Pa.

Dr. Geo. Magee read a well-prepared paper on "Animal Life in the Coal Mines," especially those stabled down in shaft coal mines. Discussion by Drs. Rectenwald, McNeil, W. J. Waugh, Weitzel, Laberg and J. A. Waugh.

Dr. W. B. Prothero reported an operation in tri-facial neurectomy, followed by much swelling and irritation of the lips and lower part of the head, which did not yield readily to treatment, but appeared to abate or recover spontaneously on the fourth day after operation. This is the Prof. W. L. Williams' operation for involuntary head-shaking, and proved successful and the patient remained under observation about fifteen months. This subject proved so interesting that many questions were asked and answered and nearly everyone present took part in the discussion.

Dr. C. Z. Laberg reported having treated twenty-eight cases of tetanus in horses with Mulford's antitoxin and having lost no cases since using it. This is a remarkable clinical experience illustrating the value of serum treatment.

Dr. N. Rectenwald made some practical remarks on obstetrics and modern surgery ; exhibited his obstetric outfit and showed some recently perfected instruments.

Dr. D. C. Gearhart made a stirring address on prosecution of illegal practitioners, and incidentally made some strenuous remarks on our duties to ourselves and fellow practitioners, with charity toward the poor and prompt collection of fair-sized bills from the rich. Friendly discussion prevailed. Dr. W. Horace Hoskins made one of his characteristic addresses on the practitioner, the public and the veterinary profession—in their various relations.

A spirit of good fellowship and conversation prevailed, and the Association was reorganized, enlarged and will be perfected at a special meeting on Feb. 11th.

JAMES A. WAUGH, V. S., *Secretary.*

RHODE ISLAND VETERINARY MEDICAL ASSOCIATION.

A meeting of veterinary surgeons of Providence and other sections of the State was held in the Hotel Dorrance, January 27, for the purpose of organizing a Rhode Island Veterinary Medical Society, and the promoters of the new organization are planning to secure the enactment of a State law regulating the practice of veterinary medicine and surgery.

There are 20 or more regularly graduated veterinarians in the State. It is proposed to eventually secure the passage of a law regulating practice, and the Legislature will be asked to enact a law prohibiting the practice of veterinary medicine and surgery by those not possessed of a diploma as evidence of proper training unless they have been regularly engaged in practice as veterinarians for a period of five years preceding the passage of the proposed act.

The meeting was called to order by Dr. L. T. Dunn. One of the first matters of business was the election of officers, which resulted as follows :

President—A. T. Parker.

First Vice-President—L. T. Dunn.

Second Vice-President—J. S. Pollard.

Secretary—T. E. Robinson, of Westerly.

Treasurer—J. T. Cunningham.

Executive Committee—Drs. Dunn, Fry, Richardson, Bertran, Monahan, McLaughlin and Tucker.

The members of the Executive Committee will draw up a set of by-laws to be presented at the next meeting of the organization. At present the social features of the Association are said by members to be the principal benefits to be derived. No legislative action was taken at this meeting.

Gov. Garvin was, as a practicing physician, made an honorary member of the society. L. T. DUNN, D. V. S.

MISSOURI VALLEY VETERINARY ASSOCIATION.

The regular session was held at the Kansas City Veterinary College, Jan. 14, 1903. Special sessions were held at 10 A. M. by the resident members of the State of Kansas and at 2.30 P. M. by the resident members of Missouri, to discuss legislation favorable to veterinarians. Bills for presentation to the Legislature were drafted at each session.

At 7.30 P. M., Dr. L. D. Brown called the Association to order, when the following papers were read:

Dr. Frank Winant, "Glanders, with Report of Outbreak." The discussion was animated, Drs. Moore, Stewart, Dalrymple and Peters participating.

Dr. H. R. McNally, "Incidents in Federal Quarantine Control of Sheep Scab." The discussion by Drs. Parker and Steele was very interesting.

Dr. Arthur Trickett, "Complications in Shipping Fever in Sheep." It was ably discussed by Drs. McClelland and Goode.

Dr. S. Stewart, "Cardiac Thrombosis." The discussion was interesting, by Drs. Peters and Dalrymple.

The Association received Drs. H. R. McNally, of Kansas City, Mo.; Frank I. Winant, Kansas City, Mo.; T. W. Hadley, Kansas City, Kan., and W. T. King, Olathe, Kan., as members.

W. R. COOPER, Sec'y-Treas.

MAINE VETERINARY MEDICAL ASSOCIATION.

The quarterly meeting was held at Hotel North, Augusta, January 14th, 1903, with a good attendance.

The minutes of the last meeting were read and approved.

On motion by Dr. Joly, the Association voted to place the name of Dr. F. S. Stevens on our honorary list, and the Secretary was instructed to so inform him.

The Chairman of the Legislative Committee reported that in their opinion it would be unwise to present a Veterinary Bill before this session of the Legislature, and the Association de-

cided to act upon their advice, and to await a more favorable opportunity, when, our plans being more perfect, greater influence might be brought to bear and thereby chances of success increased.

A motion was made and carried, instructing the Secretary to cast one vote for each officer of the preceding year, to service for another term, and he so doing the officers were declared duly elected.

The Association then had the pleasure of listening to an address by Dr. Salley, who had served faithfully as President for the preceding year. He gave the members some good sound advice, and spoke of the formation of the Association and its many trials and tribulations, and asked the members to bind themselves together and work earnestly for the advancement of the Association and their profession.

Dr. Salley also read a very interesting paper on "The Use of Anæsthetics," which called forth a good deal of applause, and it certainly showed a good deal of work on the part of the doctor.

Dr. Joly read a very practical paper on "The Foot-and-Mouth Disease," which was freely discussed by members present.

Dr. Joly then announced that he was a candidate for the position of member of the State Board of Cattle Commissioners, which at the present time has no veterinarian on its staff, and asked for the indorsement of the Association. The Association has always considered that the presence of a veterinarian on the State Board of Cattle Commissioners was an actual necessity for the public welfare, and voted to heartily indorse the candidacy of Dr. Joly and to give him all the help in their power. The Association decided to meet in Waterville, April 8th, 1903, and adjourned at a late hour, after enjoying a very interesting and instructive meeeting.

CHESTER L. BLAKELY, M. D. V., *Secretary.*

AMERICAN VETERINARY MEDICAL ASSOCIATION.

President Stewart has appointed the following as a Committee on Local Arrangements for the meeting of the American Veterinary Medical Association to be held at Ottawa, Sept. 1-4, 1903: Dr. J. G. Rutherford, Chairman, Ottawa; Dr. C. H. Higgins; Dr. Wm. Jakeman, Halifax; Dr. G. Alarie, Comte l'Assomption, Quebec; Dr. D. King Smith, Ontario; Dr. F. Torrance, Manitoba; Dr. J. B. Hart, British Columbia.

NEWS AND ITEMS.

DR. FRANK C. WELLS, State Veterinarian of Michigan, has moved from Warren to Salini.

DR. DILLARD RICKETTS, formerly of Plattsburg, Mo., has established himself in the livery business in Kansas City.

DR. W. A. NIXON, of Kansas City, has disposed of his interests in the firm of Nixon & Gatchell, to Dr. H. B. Crosby. Dr. Nixon expects to retire from veterinary practice.

DR. THOMAS W. WATSON has removed from St. Joseph, Mo., to Tyler, Texas. The doctor has selected a southern climate for the benefit of the health of himself and family.

DR. G. A. JOHNSON, of Sioux City; Dr. J. J. Repp, Ames, Ia.; Dr. W. H. Dalrymple, of Baton Rouge, La., and Dr. S. Stewart, of Kansas City, Mo., presented papers before the Nebraska Live Stock Association held at Lincoln during the third week in January.

DR. W. H. DALRYMPLE, Baton Rouge, La., spent several days in Kansas City, in January, in attendance at the National Live Stock Convention. The doctor is a member of the Executive Committee of that body. He read a paper during the meeting on "Sanitary Control of Infectious Diseases."

DRS. C. J. SIHLER and S. Stewart, of Kansas City; C. B. McClelland, of Lawrence, and W. H. Richards, of Emporia, were at Topeka, Kansas, during February in the interests of veterinary legislation. At this writing the outlook is encouraging for the passage of the veterinary law.

FRANKLIN P. ROBERGE, D. V. S., of New York City, is suing the estate of the late Robert Bonner for \$100,000 for treating his horses from 1876 until the date of his death, a few years ago, and also "for teaching him all he knew about horsemanship." Mr. Bonner made claim to being an expert on the foot of the horse; but in the opinion of many who were cognizant of his cruelty with the drawing-knife, "all he knew" would bring a very small verdict to the complainant.

OREGON ASKING FOR A PRACTICE ACT.—We have received from Dr. D. D. Keeler, of Salem, Oregon, a copy of Senate Bill No. 74, entitled "A Bill for an Act Regulating the Practice of Veterinary Medicine and Surgery." In a note accompanying it the doctor says: "We are in the midst of an effort to get a bill through the Legislature regulating the practice of veterinary medicine and surgery. The bill was formulated, with perhaps a little outside help, by Dr. W. M. McLean, State Veteri-

narian. I think it is not all he or the rest of us could wish, but we thought probably it was as good as we could now get through. There is a good prospect for it to pass the House. We may be disappointed, but I think not." Section 6 has this provision : " It shall be the duty of this board to examine diplomas of applicants for license to practice veterinary medicine and surgery or dentistry, so as to enable him to practice the same, and if upon examination he shall show that he possesses sufficient knowledge of the subject to practice, he shall be granted a license to practice, signed by the president and secretary of said board. Such examination to be written or oral, or both. The board shall also issue licenses to practice veterinary medicine and surgery or dentistry to any holder of a genuine diploma from any college of good standing authorized to grant diplomas, unless they should deem it necessary that such applicant should pass the required examination. All licenses shall be good for four years from the date thereof, and all persons receiving a license to practice veterinary medicine and surgery or dentistry from this board shall have a right to do so during the time mentioned in said license. All applications for license to practice veterinary medicine and surgery or dentistry in this state shall be made to the board inside of six days after the board has been appointed by the Governor. Thereafter no person shall so practice until he has first obtained a license from the board in accordance with the provisions of this Act." Section 9 is as follows : " Nothing in this section shall be construed to prohibit any person from practicing veterinary medicine and surgery or dentistry on any animal belonging to himself or herself or for gratuitous services to a friend, and if in any locality remote from a duly licensed veterinary surgeon there be a person who has good practical knowledge of the treatment of the ordinary diseases common to animals, he shall be granted a permit by said board to practice in that particular locality, by obtaining a petition signed by fifteen responsible stockmen residing thereat, and that said permit shall specify the locality outside of which it shall be unlawful for them to practice : *Provided*, no such permit shall be granted where a duly licensed veterinary surgeon resides ; *And provided further*, that said person applying for such permit shall pay a fee of \$5 to said board, said fee to accompany such application. This act shall not apply to commissioned veterinary surgeons of the United States army unless they enter into a general practice."

PUBLISHERS' DEPARTMENT.

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DEPARTMENT has on different occasions called the attention of readers to the great debt of gratitude they owe to publishers of veterinary works for placing at their disposal the many excellent books on topics veterinary; but we desire on this occasion to call attention to a "masterpiece" in this line, in Dr. Simon J. J. Harger's Translation of Goubaux and Barrier's "The Exterior of the Horse," published by the well-known house of J. B. Lippincott Co. They also have other attractions advertised on page 19 (ad. dept.).

WESTERN VETERINARIANS will be pleased to see the card of one of their representative supply houses, Sharp & Smith, at the top of page 6 (ad. dept.), of their favorite veterinary magazine.

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